RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Hub E1

ISSUED TO
Konec Solutions Pty Ltd

Level 3, 5 Talavera Rd, Macquarie Park NSW 2113 Australia

Tested by: Zhang Zhenwu
Zhang Zhenwu
Date: Feb. 10, 2022

Approved by:
Liao Jianming
(Technical Director)
Date: Feb. 10, 2022

Report No.:	BL-SZ21C0870-602
EUT Name:	Hub E1
Model Name:	HE1-G01
Brand Name:	Aqara
Test Standard:	AS/NZS 4268:2017 (refer section 3)
Test Conclusion:	Pass
Test Date:	Jan. 05, 2022 ~ Jan. 20, 2022
Date of Issue:	Feb. 10, 2022

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	Feb. 10, 2022	Initial Issue

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20℃ to 35℃
Ambient Relative Humidity	30% to 75%
Ambient Pressure	98 kPa to 102 kPa

1.4 Announce

(1) The test report reference to the report template version v2.1.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

(7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Konec Solutions Pty Ltd
Address	Level 3, 5 Talavera Rd, Macquarie Park NSW 2113 Australia

2.2 Manufacturer Information

Manufacturer	Lumi United Technology Co., Ltd
Address	8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave, Taoyuan Residential District, Nanshan District, Shenzhen, China

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	Hub E1
Model Name Under Test	HE1-G01
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	T0
Software Version	3.2.4_0028
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Technical Information

EUT Type	Stand-alone equipment
Network and Wireless connectivity	Wi-Fi 802.11b, 802.11g, 802.11n Zigbee

The requirement for the following technical information of the EUT was tested in this report:

Frequency Range	802.11b/g/n (20 MHz): 2.412 GHz - 2.472 GHz f_c = 2412 MHz + (N-1)*5 MHz, where - f_c = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 1 to 13. The frequency block is 2.4GHz-2.4835GHz
Modulation Type	DSSS, OFDM
Equipment Type (LBT / non- LBT)	LBT based Detect and Avoid
Adaptive or non-adaptive	Adaptive
LBT Based	Yes (Load Based)
Antenna System (eg., MIMO, Smart Antenna)	N/A
Categorization as Correlated or Completely Uncorrelated	N/A
Antenna Type	PCB Antenna
Antenna Gain	2.5 dBi (In test items related to antenna gain, the final results reflect this figure. This value is provided by the applicant.)
Beamforming Gain	N/A
The Max RF Output power	18.5 dBm
Receiver Category	1

Modulation technology	Modulation Type	Transfer Rate (Mbps)(Single RF path)
DSSS (802.11b)	DBPSK	1
	DQPSK	2
	CCK	5.5/11
OFDM (802.11g)	BPSK	6/9
	QPSK	12/18
	16QAM	24/36
	64QAM	48/54
OFDM (802.11n-20 MHz)	BPSK	6.5/7.2
	QPSK	13/19.5/14.4/21.7
	16QAM	26/39/28.9/43.3
	64QAM	52/58.5/65/57.8/65/72.2
Note: Preliminary tests were performed in different data rate in above table to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.		

Test Items	Mode	Data Rate	Channel
RF output power	11b/11g/11n20	1/6/6.5 Mbps	1/7/13
Power Spectral Density	11b/11g/11n20	1/6/6.5 Mbps	1/7/13
Adaptivity (adaptive equipment using modulations other than FHSS)	11b/11g/11n20	1/6/6.5 Mbps	1/13
Occupied Channel Bandwidth	11b/11g/11n20	1/6/6.5 Mbps	1/13
Transmitter unwanted emissions in the out-of-band domain	11b/11g/11n20	1/6/6.5 Mbps	1/13
Transmitter unwanted emissions in the spurious domain	11b/11g/11n20	1/6/6.5 Mbps	1/13
Receiver spurious emissions	11b/11g/11n20	1/6/6.5 Mbps	1/13
Receiver Blocking	11b	1 Mbps	1/13

Mode	Channel	Channel Number	Frequency (MHz)
802.11b	HIGH/MIDDLE/LOW(H/M/L)	13/7/1	2472/2442/2412
802.11g	HIGH/MIDDLE/LOW(H/M/L)	13/7/1	2472/2442/2412
802.11n20	HIGH/MIDDLE/LOW(H/M/L)	13/7/1	2472/2442/2412

2.6 Additional Instructions

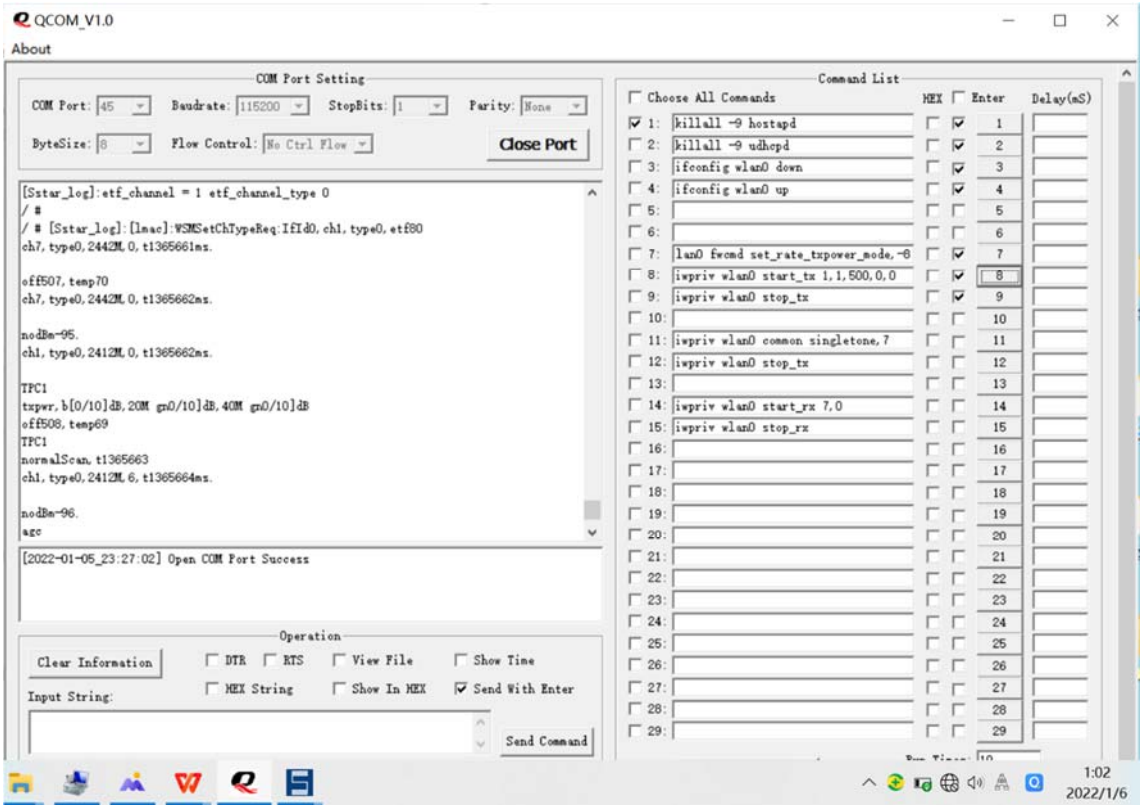
EUT Software Settings:

Mode	☒ Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Power level setup in software			
Test Software Version	QCOM		
Support Units (Software installation media)	Description	Manufacturer	Model
	Notebook	HP	N/A
Mode	Channel	Soft Set	
802.11b	1	-8	
	7	-8	
	13	-6	
802.11g	1	-6	
	7	-6	
	13	-6	
802.11n20	1	-6	
	7	-6	
	13	-6	

Run software:



3 SUMMARY OF TEST RESULTS

No.	Identity	Document Title
1	AS/NZS 4268:2017	Radio equipment and systems - Short range devices - Limits and methods of measurement
2	ETSI EN 300 328 V2.2.2 (2019-07)	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum

Test items and the results are as follows:

Report Section	Standard Rule	Description	Channel	Test Result	Verdict	Remark
Transmitter Parameters						
5.1.1	4.3.2.2	RF output power	Low/Middle/High	ANNEX A.1	Pass	--
5.1.2	4.3.2.3	Power Spectral Density	Low/Middle/High	ANNEX A.2	Pass	--
5.1.3	4.3.2.4	Duty Cycle, Tx-sequence, Tx-gap	--	ANNEX A.3	N/A	Note [1], Note [2]
5.1.4	4.3.2.5	Medium Utilization (MU) factor	--	ANNEX A.4	N/A	Note [1], Note [2]
5.1.5	4.3.2.6	Adaptivity (adaptive equipment using modulations other than FHSS)	Low/ High	ANNEX A.5	Pass	Note [2], Note [3]
5.1.6	4.3.2.7	Occupied Channel Bandwidth	Low/ High	ANNEX A.6	Pass	--
5.1.7	4.3.2.8	Transmitter unwanted emissions in the out-of-band domain	Low/ High	ANNEX A.7	Pass	--
5.1.8	4.3.2.9	Transmitter unwanted emissions in the spurious domain	Low/ High	ANNEX A.8	Pass	--
Receiver Parameters						
5.2.1	4.2.3.2	Receiver categories	--	--	--	--
5.2.2	4.3.2.10	Receiver spurious emissions	Low/ High	ANNEX A.9	Pass	--
5.2.3	4.3.2.11	Receiver Blocking	Low/ High	ANNEX A.10	Pass	--
Other Parameters						
5.3.1	4.3.2.12	Geo-location capability	--	--	N/A	Note [4]

Note [1]: This requirement apply to non-adaptive equipment or to adaptive equipment when operating in a non-adaptive mode. The equipment is using wide band modulations other than FHSS.
Note [2]: This requirement do not apply for equipment with a maximum declared RF Output power level of less than 10 dBm e.i.r.p. or for equipment when operating in a mode where the RF Output power is less than 10 dBm e.i.r.p.
Note [3]: This requirement does not apply to non-adaptive equipment or adaptive equipment operating in a non-adaptive mode.
Note [4]: This requirement does not apply to devices that do not support Geo-location capability.

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	30% to 75%	
Atmospheric Pressure	98 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+22℃ to +25℃
	LT (Low Temperature)	-10℃
	HT (High Temperature)	+40℃
Working Voltage of the EUT	NV (Normal Voltage)	5.0 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2021.08.09	2022.08.08
Spectrum Analyzer	KEYSIGHT	N9020A	MY56060183	2021.09.08	2022.09.07
Vector Signal Generator	ROHDE&SCHWARZ	SMBV100A	260592	2021.01.27	2022.01.26
Signal Generator	ROHDE&SCHWARZ	SMB100A	177746	2021.08.24	2022.08.23
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2021.06.01	2022.05.31
Bluetooth Signaling Unit	ROHDE&SCHWARZ	CMW270	100607	2021.06.01	2022.05.31
Bluetooth Signaling Unit	ROHDE&SCHWARZ	CMW500	142028	2021.06.01	2022.05.31
DC Power Supply	ITECH	IT6720	60010301071 7610007	2021.09.22	2022.09.21
Temperature Chamber	AHK	NTH64-40A	1310	2022.01.05	2023.01.04
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2021.09.13	2022.09.12
Test Antenna-Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2021.04.16	2024.04.15
Test Antenna-Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2021.08.20	2024.08.19
Test Antenna-Horn(1-18 GHz)	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2022.07.01
Test Antenna-Horn (18-40 GHz)	A-INFO	LB-180400KF	J211060273	2021.07.02	2024.07.01
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2021.09.04	2024.09.03

4.3 Test Software List

Description	Manufacturer	Software Version	Serial No.
TS8997 EMC32	ROHDE&SCHWARZ	V10.00.00	N/A

4.4 Measurement Uncertainty

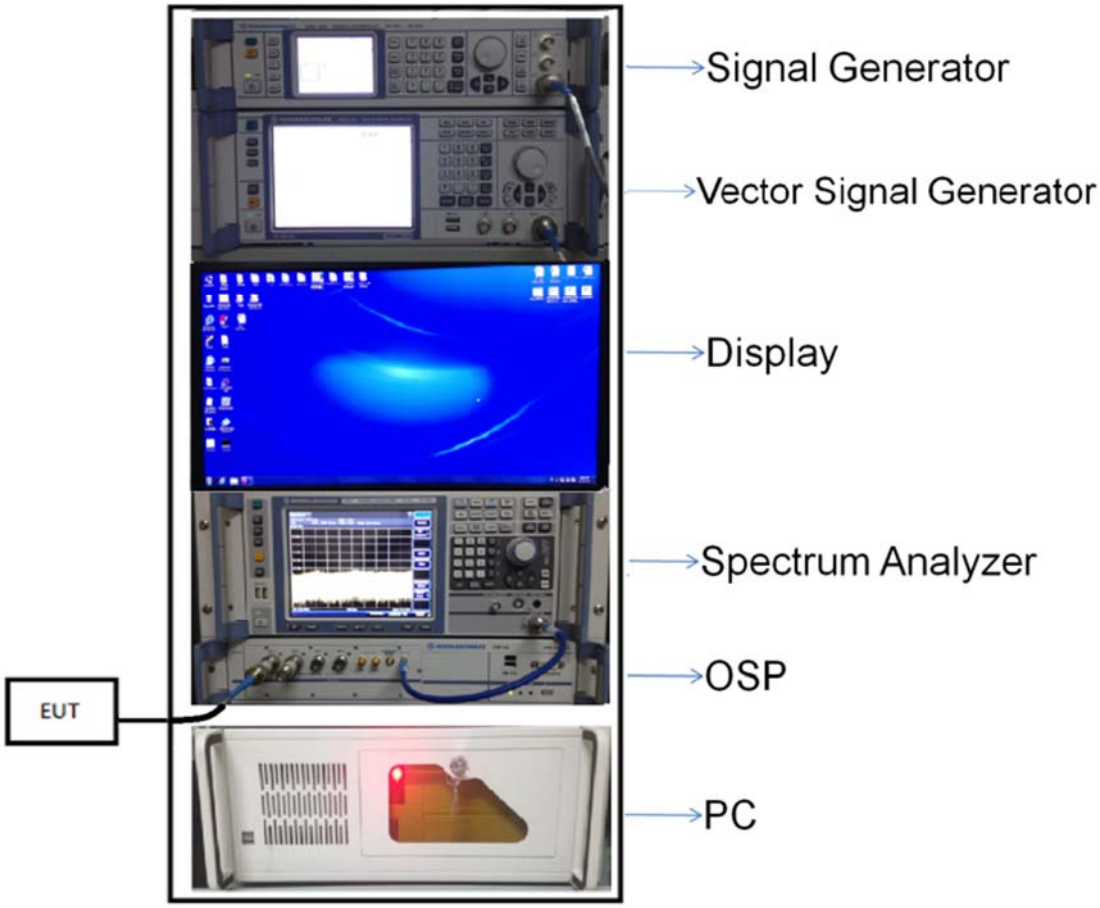
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Parameters	Uncertainty
Occupied Channel Bandwidth	3.6 %
RF output power, conducted	0.66 dB
Power Spectral Density, conducted	0.90 dB
Unwanted Emissions, conducted	1.78 dB
All emissions, radiated	5.36 dB
Temperature	0.82 °C
Humidity	4.1 %

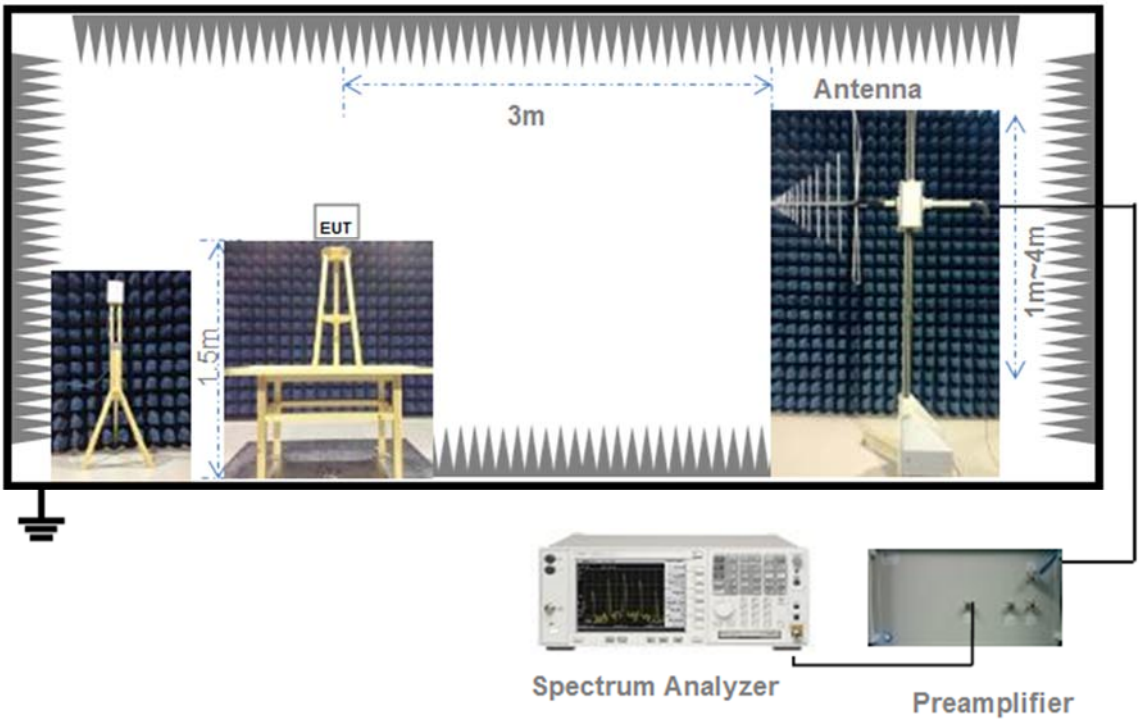
4.5 Description of Test Setup

4.5.1 For Conducted Test

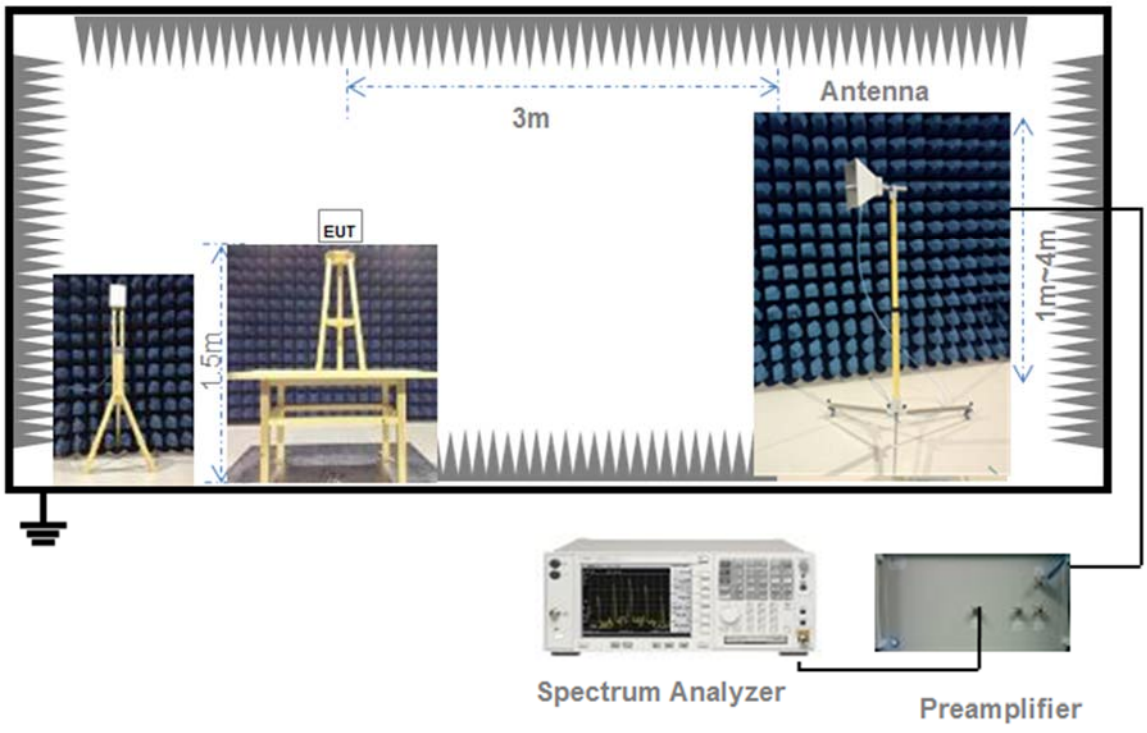


(Diagram 1)

4.5.2 For Radiated Test

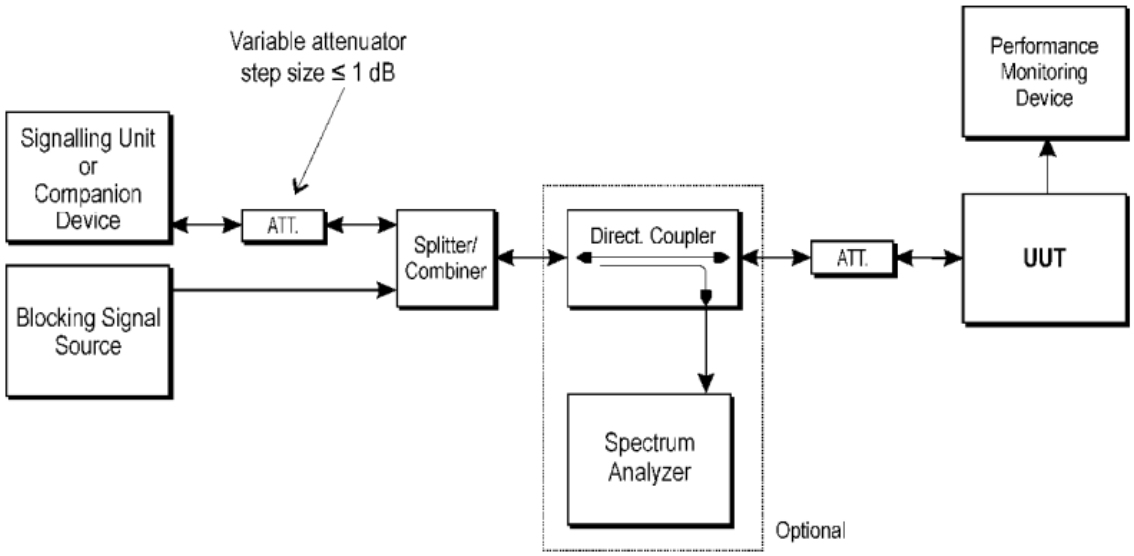


(Diagram 2)



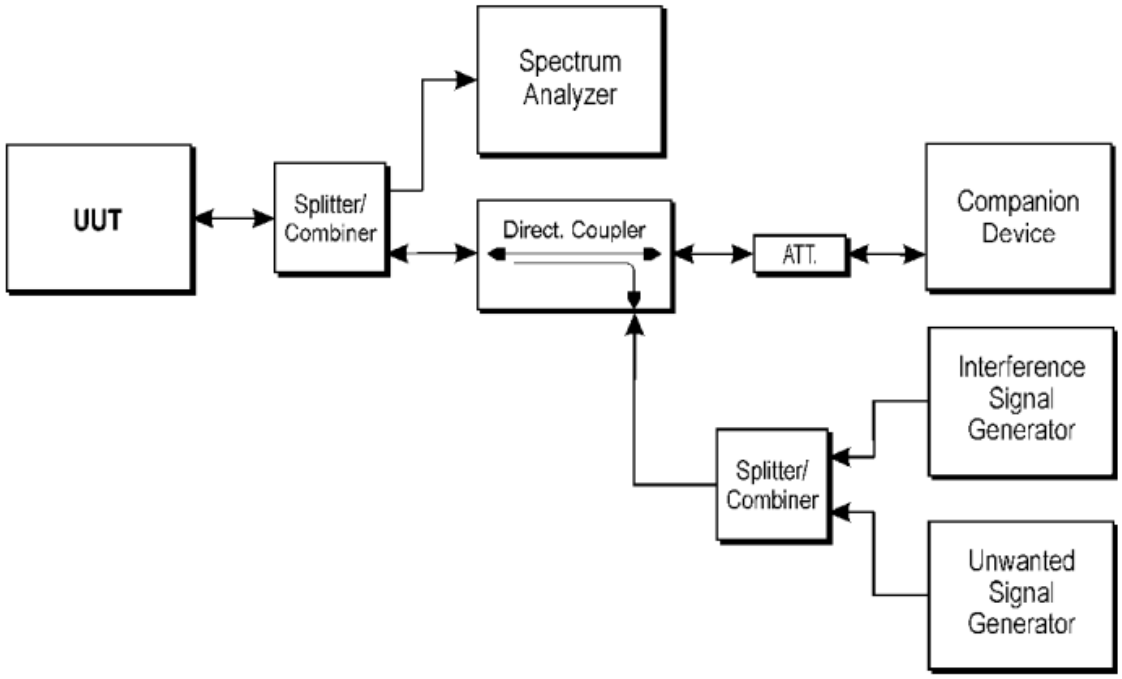
(Diagram 3)

4.5.3 For Receiver Blocking Test



(Diagram 4)

4.5.4 For Adaptivity Test



(Diagram 5)

5 Test Type and Test Results

5.1 Transmitter Parameters

5.1.1 RF output power

5.1.1.1 Limit

The RF output power for non-FHSS equipment shall be equal to or less than 20 dBm.

5.1.1.2 Test Setup

The section 4.5.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.1.3 Test Procedure

Reference to ETSI EN 300 328 V2.2.2 clause 5.4.2.2.

5.1.1.4 Test Result

Please refer to ANNEX A.1.

5.1.2 Power Spectral Density

5.1.2.1 Limit

The maximum Power Spectral Density for non-FHSS equipment is 10 dBm per MHz.

5.1.2.2 Test Setup

The section 4.5.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.2.3 Test Procedure

T Reference to ETSI EN 300 328 V2.2.2 clause 5.4.3.2.

5.1.2.4 Test Result

Please refer to ANNEX A.2.

5.1.3 Duty Cycle, Tx-sequence, Tx-gap

5.1.3.1 Limit

Non-FHSS equipment shall comply with the following:

• The Duty Cycle shall be equal to or less than the maximum value declared by the manufacturer.

• The Tx-sequence time shall be equal to or less than 10 ms.

• The minimum Tx-gap time following a Tx-sequence shall be equal to the duration of that proceeding Txsequence with a minimum of 3,5 ms.

5.1.3.2 Test Setup

The section 4.5.1 (Diagram 1) test setup description was used for this test.

5.1.3.3 Test Procedure

Reference to ETSI EN 300 328 V2.2.2 clause 5.4.2.2.

5.1.3.4 Test Result

Please refer to ANNEX A.3.

.

5.1.4 Medium Utilization (MU) factor

5.1.4.1 Limit

The maximum Medium Utilization factor for non-adaptive non-FHSS equipment shall be 10 %.

5.1.4.2 Test Setup

The section 4.5.1 (Diagram 1) test setup description was used for this test.

5.1.4.3 Test Procedure

Reference to ETSI EN 300 328 V2.2.2 clause 5.4.2.2.

5.1.4.4 Test Procedure

Please refer to ANNEX A.4.

5.1.5 Adaptivity (adaptive equipment using modulations other than FHSS)

5.1.5.1 Limit

Requirement	Operational Mode			
	Non-LBT based Detect and Avoid	LBT based Detect and Avoid		
		Frame Based Equipment	Load Based Equipment (CCA using 'energy detect')	Load Based Equipment (CCA not using any of the mechanisms referenced as Note 2)
Minimum Clear Channel Assessment (CCA) Time	NA	18 us (see Note 1)	(see Note 2)	18 us (see Note 1)
Maximum Channel Occupancy (COT) Time	40 ms	1 ms to 10 ms	(see Note 2)	13 ms
Minimum Idle Period	5% of COT	5% of COT	(see Note 2)	NA
Extended CCA check	NA	NA	(see Note 2)	a random duration in the range between 18 µs and at least 160 µs
Short Control Signalling Transmissions	Maximum duty cycle of 10 % within an observation period of 50 ms (see Note 3)			

Note 1: The CCA time used by the equipment shall be declared by the supplier.
Note 2: Load Based Equipment may implement an LBT based spectrum sharing mechanism based on the Clear Channel Assessment (CCA) mode using energy detect, as described in IEEE 802.11™-2012 [i.3] clause 9, clause 10, clause 16, clause 17, clause 19 and clause 20, or in IEEE 802.15.4™-2011 [i.4], clause 4, clause 5 and clause 8.
Note 3: Adaptive equipment may or may not have Short Control Signalling Transmissions.
Note 4: The Idle Period is considered to be equal to the CCA or Extended CCA time defined in clause 4.3.2.6.3.2.3, step 1 and step 2.
Note 5: The Idle Period in between transmissions is considered to be the CCA or the Extended CCA check as there are no transmissions during this period.

Interference threshold level:

Maximum transmit power (P_H) EIRP dBm	Threshold level (TL)
20	-70 dBm / MHz
Note [1]: TL = -70 dBm/MHz + 10 × log10 (100 mW / Pout) (Pout in mW e.i.r.p.). Note [2]: transmitter the CCA threshold level (TL) shall be equal or lower than -70 dBm/MHz at the input to the receiver (assuming a 0 dBi receive antenna).	

Unwanted Signal parameters

Wanted signal mean power from companion device	Unwanted signal frequency (MHz)	Unwanted CW signal power (dBm)
sufficient to maintain the link (see Note [2])	2 395 or 2 488,5 (see Note [1])	-35 (see Note [3])
Note [1]: The highest frequency shall be used for testing operating channels within the range 2400 MHz to 2442 MHz, while the lowest frequency shall be used for testing operating channels within the range 2 442 MHz to 2 483.5 MHz. See clause 5.4.6.1. Note [2]: A typical value which can be used in most cases is -50 dBm/MHz. Note [3]: The level specified is the level in front of the UUT antenna. In case of conducted measurements, this level has to be corrected by the actual antenna assembly gain.		

5.1.5.2 Test Setup

The section 4.5.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.5.3 Test Procedure

Reference to ETSI EN 300 328 V2.2.2 clause 5.4.6.2.

5.1.5.4 Test Result

Please refer to ANNEX A.5.

5.1.6 Occupied Channel Bandwidth

5.1.6.1 Limit

The Occupied Channel Bandwidth for each hopping frequency shall fall completely within the band 2400 MHz to 2483.5 MHz.

In addition, for non-adaptive non-FHSS equipment with e.i.r.p. greater than 10 dBm, the Occupied Channel Bandwidth shall be equal to or less than 20 MHz.

5.1.6.2 Test Setup

The section 4.5.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.6.3 Test Procedure

Reference to ETSI EN 300 328 V2.2.2 clause 5.4.7.2.

5.1.6.4 Test Result

Please refer to ANNEX A.6.

5.1.7 Transmitter unwanted emissions in the out-of-band domain

5.1.7.1 Limit

The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in figure 1.

NOTE: Within the 2 400 MHz to 2 483,5 MHz band, the Out-of-band emissions are fulfilled by compliance with the Occupied Channel Bandwidth requirement in §2.4 in this report.

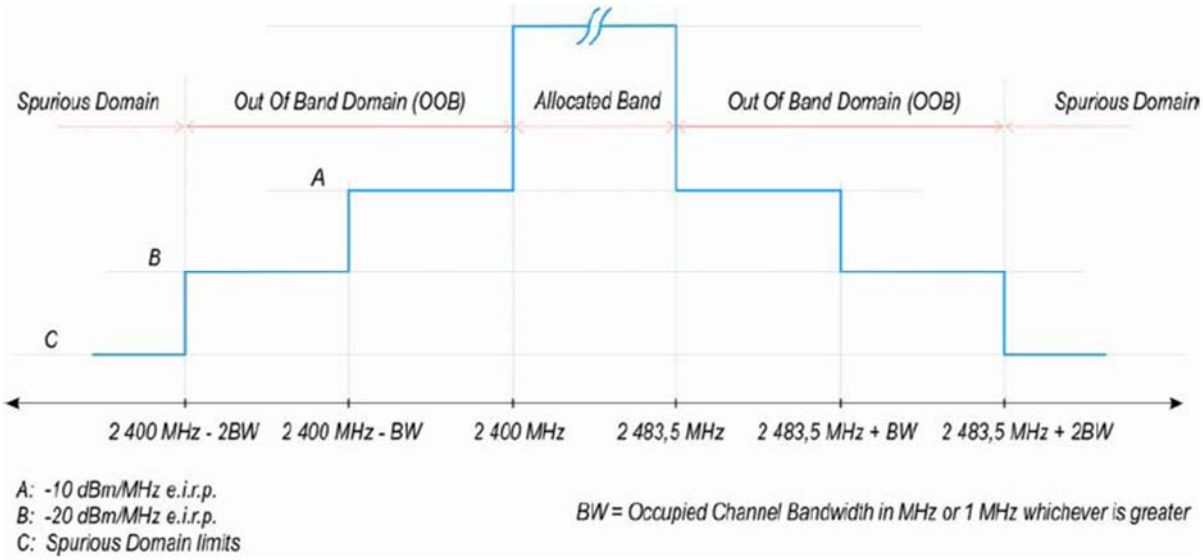


Figure 1: Transmit mask

5.1.7.2 Test Setup

The section 4.5.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.7.3 Test Procedure

Reference to ETSI EN 300 328 V2.2.2 clause 5.4.8.2.

5.1.7.4 Test Result

Please refer to ANNEX A.7.

5.1.8 Transmitter unwanted emissions in the spurious domain

5.1.8.1 Limit

The transmitter unwanted emissions in the spurious domain shall not exceed the values in following tables:

Frequency range	Maximum power (dBm)	Bandwidth
30 MHz to 47 MHz	-36	100 kHz
47 MHz to 74 MHz	-54	100 kHz
74 MHz to 87.5 MHz	-36	100 kHz
87.5 MHz to 118 MHz	-54	100 kHz
118 MHz to 174 MHz	-36	100 kHz
174 MHz to 230 MHz	-54	100 kHz
230 MHz to 470 MHz	-36	100 kHz
470 MHz to 694 MHz	-54	100 kHz
694 MHz to 1 GHz	-36	100 kHz
1 GHz to 12.75 GHz	-30	1 MHz

5.1.8.2 Test Setup

See the section 4.5.1 and 4.5.2 (Diagram 1, 2, 3) for test setup description. The photo of test setup please refer to ANNEX B.

5.1.8.3 Test Procedure

Reference to ETSI EN 300 328 V2.2.2 clause 5.4.9.2.

5.1.8.4 Test Result

Please refer to ANNEX A.8.

5.2 Receiver Parameters

5.2.1 Receiver categories

There have three different receiver categories for which different receiver requirements and/or corresponding limits apply.

Receiver Category

Receiver Category	Definition
category 1	Adaptive equipment with a maximum RF output power greater than 10 dBm e.i.r.p.
category 2	Non-adaptive equipment with a Medium Utilization (MU) factor greater than 1 % and less than or equal to 10 % or adaptive equipment and non-adaptive with a maximum RF output power of 10 dBm e.i.r.p.
category 3	Non-adaptive equipment with a maximum Medium Utilization (MU) factor of 1 % or adaptive equipment and non-adaptive with a maximum RF output power of 0 dBm e.i.r.p.

5.2.2 Receiver Spurious Emissions

5.2.2.1 Limit

Receiver spurious emissions are emissions at any frequency when the equipment is in receive mode.

The spurious emissions of the transmitter shall not exceed the values in following tables for the EUT in this report.

Frequency range	Maximum power (dBm)	Bandwidth
30 MHz to 1 GHz	-57	100 KHz
1 GHz to 12.75 GHz	-47	1 MHz

5.2.2.2 Test Setup

See the section 4.5.1 (Diagram 1) for test setup description. The photo of test setup please refer to ANNEX B.

5.2.2.3 Test Procedure

Reference to ETSI EN 300 328 V2.2.2 clause 5.4.10.2.

5.2.2.4 Test Result

Please refer to ANNEX A.9.

5.2.3 Receiver Blocking

Limit

While maintaining the minimum performance criteria as defined in clause 4.3.1.12.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined for the applicable receiver category provided in table.

Receiver Category 1 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency(MHz)	Blocking signal power (dBm) (see note 4)	Type of blocking signal
(-133 dBm + 10 × $\log_{10}$(OCBW)) or -68 dBm whichever is less (see note 2)	2 380	-34	CW
	2 504	-34	CW
(-139 dBm + 10 × $\log_{10}$(OCBW)) or -74 dBm whichever is less (see note 3)	2 300	-34	CW
	2 330	-34	CW
	2 360	-34	CW
	2 524	-34	CW
	2 584	-34	CW
	2 674	-34	CW

Note [1]: OCBW is in Hz.

Note [2]: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. P_{min} is the minimum level of wanted signal (in dBm) required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

Note [3]: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 20 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

Note [4]: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Receiver Category 2 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 10 dB) or (-74 dBm + 10 dB) whichever is less (see note 2)	2 380	-34	CW
	2 504	-34	CW
	2 300	-34	CW
	2 584	-34	CW

NOTE [1]: OCBW is in Hz.

NOTE [2]: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE [3]: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Receiver Category 3 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency(MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 20 dB) or (-74 dBm + 20 dB) whichever is less (see note 2)	2 380	-34	CW
	2 504	-34	CW
	2 300	-34	CW
	2 584	-34	CW

NOTE [1]: OCBW is in Hz.

NOTE [2]: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 30 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE [3]: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

5.2.3.1 Test Setup

See the section 4.5.3 (Diagram 4) for test setup description. The photo of test setup please refer to ANNEX B.

5.2.3.2 Test Procedure

Reference to ETSI EN 300 328 V2.2.2 clause 5.4.11.2.

5.2.3.3 Test Result

Please refer to ANNEX A.10.

5.3 Other Parameters

5.3.1 Geo-location capability

5.3.1.1 Requirements

The geographical location determined by the non-FHSS equipment as defined in clause 4.3.2.12.2 shall not be accessible to the user in a way that would allow the user to alter it.

5.3.1.2 Definition

Geo-location capability is a feature of the equipment to determine its geographical location with the purpose to configure itself according to the regulatory requirements applicable at the geographical location where it operates.
The geo-location capability may be present in the equipment or in an external device (temporary) associated with the equipment operating at the same geographical location during the initial power up of the equipment. The geographical location may also be available in equipment already installed and operating at the same geographical location.

5.3.1.3 Test Result

Note: Not applicable.

ANNEX A TEST RESULT

A.1 RF output power

Test Data

Note 1: EIRP Power = Conducted Power + Antenna Gain

Modulation Mode			802.11b		
Limit			20 dBm		
Test Result					
Test Method	Test Conditions		EIRP (dBm)		
	Voltage	Temperature	Low Channel	Middle Channel	High Channel
			EIRP	EIRP	EIRP
☐ Radiated ☒ Conducted	NV	NT	18.2	18.1	18.3
		LT	17.9	18.2	18.5
		HT	17.8	17.7	18.2
Test Verdict			Pass		

Modulation Mode			802.11g		
Limit			20 dBm		
Test Result					
Test Method	Test Conditions		EIRP (dBm)		
	Voltage	Temperature	Low Channel	Middle Channel	High Channel
			EIRP	EIRP	EIRP
☐ Radiated ☒ Conducted	NV	NT	16.2	16.1	15.3
		LT	15.9	16.2	15.5
		HT	15.9	16.1	15.5
Test Verdict			Pass		

Modulation Mode			802.11n(20 MHz)		
Limit			20 dBm		
Test Result					
Test Method	Test Conditions		EIRP (dBm)		
	Voltage	Temperature	Low Channel	Middle Channel	High Channel
			EIRP	EIRP	EIRP
☐ Radiated ☒ Conducted	NV	NT	14.5	14.3	13.4
		LT	14.3	14.1	13.4
		HT	14.1	14.1	13.5
Test Verdict			Pass		

Bursts Power List

802.11b: Low Channel

Burst RMS Power	Start Time	Stop Time	Tx_on	Tx_off
dBm	ms	ms	ms	ms
18.1	0.000	4.306	4.306	0.095
17.8	4.401	8.708	4.307	0.095
17.6	8.803	13.110	4.307	0.095
17.7	13.205	17.511	4.306	0.096
18.0	17.607	21.913	4.306	0.096
18.0	22.009	26.315	4.306	0.095
17.7	26.410	30.717	4.307	0.095
17.5	30.812	35.119	4.307	0.095
17.9	35.214	39.520	4.306	0.096
18.2	39.616	43.922	4.306	0.095
17.7	44.017	48.324	4.307	0.095
17.4	48.419	52.726	4.307	0.096
18.0	52.822	57.128	4.306	0.096
17.8	57.224	61.530	4.306	0.096
17.7	61.626	65.933	4.307	0.096
18.0	66.029	70.335	4.306	0.096
17.5	70.431	74.738	4.307	0.096
18.2	74.834	79.140	4.306	0.096
17.7	79.236	83.542	4.306	0.096
17.6	83.638	87.945	4.307	0.096
17.9	88.041	92.347	4.306	0.096
17.7	92.443	96.750	4.307	0.096
18.2	96.846	101.152	4.306	0.096
17.4	101.248	105.555	4.307	0.096
17.9	105.651	109.957	4.306	0.096
17.8	110.053	114.359	4.306	0.096
17.7	114.455	118.762	4.307	0.096
18.1	118.858	123.164	4.306	0.096
17.4	123.260	127.567	4.307	0.096
18.2	127.663	131.969	4.306	0.096
17.7	132.065	136.371	4.306	0.096
17.6	136.467	140.774	4.307	0.096
17.9	140.870	145.176	4.306	0.096
17.6	145.272	149.579	4.307	0.096

802.11b: Middle Channel

Burst RMS Power	Start Time	Stop Time	Tx_on	Tx_off
dBm	ms	ms	ms	ms
17.7	0.000	4.307	4.307	0.096
17.6	4.403	8.710	4.307	0.096
17.8	8.806	13.113	4.307	0.097
18.1	13.210	17.516	4.306	0.097
18.2	17.613	21.919	4.306	0.097
18.0	22.016	26.322	4.306	0.097
17.8	26.419	30.725	4.306	0.097
17.8	30.822	35.128	4.306	0.097
17.6	35.225	39.532	4.307	0.096
17.4	39.628	43.935	4.307	0.096
17.5	44.031	48.338	4.307	0.096
17.7	48.434	52.741	4.307	0.096
17.6	52.837	57.144	4.307	0.096
17.8	57.240	61.547	4.307	0.096
17.6	61.643	65.950	4.307	0.096
17.8	66.046	70.352	4.306	0.097
18.1	70.449	74.755	4.306	0.096
17.7	74.851	79.158	4.307	0.096
17.5	79.254	83.561	4.307	0.096
17.8	83.657	87.963	4.306	0.097
18.2	88.060	92.366	4.306	0.096
17.6	92.462	96.769	4.307	0.096
17.4	96.865	101.172	4.307	0.096
17.8	101.268	105.574	4.306	0.097
18.2	105.671	109.977	4.306	0.096
17.6	110.073	114.380	4.307	0.096
17.4	114.476	118.783	4.307	0.096
17.8	118.879	123.185	4.306	0.097
18.2	123.282	127.588	4.306	0.096
17.7	127.684	131.991	4.307	0.096
17.4	132.087	136.394	4.307	0.096
17.9	136.490	140.796	4.306	0.097
18.1	140.893	145.199	4.306	0.096
17.7	145.295	149.602	4.307	0.096

802.11b: High Channel

Burst RMS Power	Start Time	Stop Time	Tx_on	Tx_off
dBm	ms	ms	ms	ms
17.7	0.000	4.307	4.307	0.096
17.9	4.403	8.710	4.307	0.096
18.1	8.806	13.112	4.306	0.097
18.3	13.209	17.515	4.306	0.097
18.5	17.612	21.918	4.306	0.096
18.1	22.014	26.321	4.307	0.096
18.0	26.417	30.724	4.307	0.096
17.9	30.820	35.127	4.307	0.096
17.7	35.223	39.530	4.307	0.096
18.1	39.626	43.932	4.306	0.097
18.2	44.029	48.335	4.306	0.097
18.5	48.432	52.738	4.306	0.097
18.4	52.835	57.141	4.306	0.096
17.9	57.237	61.544	4.307	0.096
18.0	61.640	65.947	4.307	0.096
17.7	66.043	70.350	4.307	0.096
17.9	70.446	74.753	4.307	0.096
18.1	74.849	79.155	4.306	0.097
18.3	79.252	83.558	4.306	0.097
18.5	83.655	87.961	4.306	0.096
18.1	88.057	92.364	4.307	0.096
17.9	92.460	96.767	4.307	0.096
17.8	96.863	101.170	4.307	0.096
17.7	101.266	105.573	4.307	0.096
18.1	105.669	109.975	4.306	0.097
18.2	110.072	114.378	4.306	0.097
18.5	114.475	118.781	4.306	0.097
18.3	118.878	123.184	4.306	0.096
17.9	123.280	127.587	4.307	0.096
18.0	127.683	131.990	4.307	0.096
18.4	132.086	136.392	4.306	0.096
17.7	136.488	140.795	4.307	0.096
18.5	140.891	145.197	4.306	0.096
17.8	145.293	149.599	4.306	0.097

802.11g: Low Channel

Burst RMS Power	Start Time	Stop Time	Tx_on	Tx_off
dBm	ms	ms	ms	ms
16.1	0.000	0.714	0.714	0.097
16.1	0.811	1.524	0.713	0.097
16.1	1.621	2.335	0.714	0.097
16.1	2.432	3.146	0.714	0.096
16.1	3.242	3.956	0.714	0.097
16.1	4.053	4.767	0.714	0.097
16.1	4.864	5.577	0.713	0.097
16.1	5.674	6.388	0.714	0.097
16.1	6.485	7.199	0.714	0.096
16.1	7.295	8.009	0.714	0.097
16.2	8.106	8.820	0.714	0.097
16.1	8.917	9.631	0.714	0.096
16.1	9.727	10.441	0.714	0.097
16.1	10.538	11.252	0.714	0.096
16.1	11.348	12.062	0.714	0.097
16.1	12.159	12.873	0.714	0.097
16.1	12.970	13.683	0.713	0.097
16.1	13.780	14.494	0.714	0.097
16.1	14.591	15.305	0.714	0.096
16.1	15.401	16.115	0.714	0.097
16.2	16.212	16.926	0.714	0.097
16.1	17.023	17.736	0.713	0.097
16.1	17.833	18.547	0.714	0.097
16.1	18.644	19.358	0.714	0.096
16.1	19.454	20.168	0.714	0.097
16.1	20.265	20.979	0.714	0.097
16.1	21.076	21.790	0.714	0.096
16.1	21.886	22.600	0.714	0.097
16.1	22.697	23.411	0.714	0.096
16.1	23.507	24.221	0.714	0.097
16.1	24.318	25.032	0.714	0.097
16.1	25.129	25.843	0.714	0.096
16.1	25.939	26.653	0.714	0.097
16.1	26.750	27.464	0.714	0.097

802.11g: Middle Channel

Burst RMS Power	Start Time	Stop Time	Tx_on	Tx_off
dBm	ms	ms	ms	ms
16.1	0.000	0.714	0.714	0.096
16.2	0.810	1.524	0.714	0.097
16.2	1.621	2.335	0.714	0.097
16.1	2.432	3.146	0.714	0.097
16.2	3.243	3.956	0.713	0.097
16.2	4.053	4.767	0.714	0.097
16.2	4.864	5.578	0.714	0.097
16.2	5.675	6.388	0.713	0.097
16.2	6.485	7.199	0.714	0.097
16.2	7.296	8.010	0.714	0.097
16.2	8.107	8.821	0.714	0.096
16.2	8.917	9.631	0.714	0.096
16.2	9.727	10.441	0.714	0.097
16.2	10.538	11.251	0.713	0.097
16.2	11.348	12.062	0.714	0.096
16.2	12.158	12.872	0.714	0.097
16.2	12.969	13.683	0.714	0.096
16.2	13.779	14.493	0.714	0.097
16.2	14.590	15.303	0.713	0.097
16.2	15.400	16.114	0.714	0.096
16.2	16.210	16.924	0.714	0.097
16.2	17.021	17.735	0.714	0.096
16.2	17.831	18.545	0.714	0.096
16.2	18.641	19.355	0.714	0.097
16.2	19.452	20.166	0.714	0.096
16.2	20.262	20.976	0.714	0.097
16.2	21.073	21.786	0.713	0.097
16.2	21.883	22.597	0.714	0.096
16.2	22.693	23.407	0.714	0.097
16.2	23.504	24.218	0.714	0.096
16.2	24.314	25.028	0.714	0.097
16.2	25.125	25.838	0.713	0.097
16.2	25.935	26.649	0.714	0.096
16.2	26.745	27.459	0.714	0.097

802.11g: High Channel

Burst RMS Power	Start Time	Stop Time	Tx_on	Tx_off
dBm	ms	ms	ms	ms
15.5	0.000	0.714	0.714	0.096
15.5	0.810	1.524	0.714	0.096
15.5	1.620	2.334	0.714	0.096
15.5	2.430	3.144	0.714	0.096
15.5	3.240	3.954	0.714	0.096
15.4	4.050	4.763	0.713	0.097
15.4	4.860	5.574	0.714	0.096
15.4	5.670	6.384	0.714	0.096
15.5	6.480	7.193	0.713	0.097
15.5	7.290	8.003	0.713	0.097
15.5	8.100	8.813	0.713	0.097
15.5	8.910	9.623	0.713	0.096
15.4	9.719	10.433	0.714	0.096
15.5	10.529	11.243	0.714	0.096
15.5	11.339	12.053	0.714	0.096
15.5	12.149	12.863	0.714	0.096
15.5	12.959	13.673	0.714	0.096
15.5	13.769	14.483	0.714	0.096
15.5	14.579	15.293	0.714	0.096
15.5	15.389	16.103	0.714	0.096
15.5	16.199	16.913	0.714	0.096
15.5	17.009	17.723	0.714	0.096
15.5	17.819	18.533	0.714	0.096
15.5	18.629	19.343	0.714	0.096
15.5	19.439	20.153	0.714	0.096
15.5	20.249	20.963	0.714	0.096
15.4	21.059	21.773	0.714	0.096
15.5	21.869	22.583	0.714	0.096
15.4	22.679	23.392	0.713	0.097
15.4	23.489	24.202	0.713	0.097
15.5	24.299	25.013	0.714	0.096
15.5	25.109	25.822	0.713	0.097
15.5	25.919	26.632	0.713	0.097
15.5	26.729	27.442	0.713	0.096

802.11n(20 MHz): Low Channel

Burst RMS Power	Start Time	Stop Time	Tx_on	Tx_off
dBm	ms	ms	ms	ms
14.1	0.000	0.102	0.102	0.038
14.0	0.140	0.242	0.102	0.038
14.0	0.280	0.381	0.101	0.039
14.0	0.420	0.522	0.102	0.038
14.2	0.560	0.662	0.102	0.038
14.1	0.700	0.802	0.102	0.038
14.0	0.840	0.942	0.102	0.038
14.0	0.980	1.082	0.102	0.038
14.1	1.120	1.222	0.102	0.038
14.1	1.260	1.362	0.102	0.038
14.1	1.400	1.502	0.102	0.038
14.1	1.540	1.642	0.102	0.038
14.3	1.680	1.782	0.102	0.038
14.2	1.820	1.922	0.102	0.038
14.1	1.960	2.062	0.102	0.038
14.5	2.100	2.202	0.102	0.038
14.1	2.240	2.342	0.102	0.038
14.1	2.380	2.482	0.102	0.038
13.9	2.520	2.622	0.102	0.038
14.1	2.660	2.762	0.102	0.038
14.0	2.800	2.902	0.102	0.038
14.2	2.940	3.042	0.102	0.038
14.2	3.080	3.182	0.102	0.038
14.2	3.220	3.322	0.102	0.038
14.2	3.360	3.462	0.102	0.038
14.1	3.500	3.602	0.102	0.038
14.2	3.640	3.742	0.102	0.038
14.0	3.780	3.882	0.102	0.038
14.0	3.920	4.022	0.102	0.038
14.0	4.060	4.162	0.102	0.038
14.1	4.200	4.302	0.102	0.038
14.0	4.340	4.442	0.102	0.039
14.2	4.481	4.582	0.101	0.039
14.1	4.621	4.722	0.101	0.039

802.11n(20 MHz): Middle Channel

Burst RMS Power	Start Time	Stop Time	Tx_on	Tx_off
dBm	ms	ms	ms	ms
14.0	0.000	0.102	0.102	0.038
14.0	0.140	0.242	0.102	0.038
13.9	0.280	0.382	0.102	0.038
13.9	0.420	0.522	0.102	0.038
13.9	0.560	0.662	0.102	0.038
13.9	0.700	0.802	0.102	0.038
14.0	0.840	0.942	0.102	0.038
14.3	0.980	1.082	0.102	0.038
14.0	1.120	1.222	0.102	0.038
14.0	1.260	1.362	0.102	0.038
14.1	1.400	1.502	0.102	0.038
13.8	1.540	1.642	0.102	0.038
13.9	1.680	1.782	0.102	0.038
13.9	1.820	1.922	0.102	0.038
13.9	1.960	2.062	0.102	0.038
13.7	2.100	2.202	0.102	0.038
14.0	2.240	2.342	0.102	0.039
13.9	2.381	2.482	0.101	0.039
14.0	2.521	2.623	0.102	0.038
14.0	2.661	2.763	0.102	0.038
14.0	2.801	2.903	0.102	0.038
14.0	2.941	3.042	0.101	0.039
13.9	3.081	3.183	0.102	0.038
13.9	3.221	3.323	0.102	0.038
13.9	3.361	3.462	0.101	0.039
14.0	3.501	3.603	0.102	0.038
14.0	3.641	3.743	0.102	0.038
13.9	3.781	3.883	0.102	0.038
14.0	3.921	4.023	0.102	0.038
14.2	4.061	4.163	0.102	0.038
14.0	4.201	4.303	0.102	0.038
13.9	4.341	4.443	0.102	0.038
13.9	4.481	4.583	0.102	0.038
13.9	4.621	4.723	0.102	0.038

802.11n(20 MHz): High Channel

Burst RMS Power	Start Time	Stop Time	Tx_on	Tx_off
dBm	ms	ms	ms	ms
13.2	0.000	0.102	0.102	0.038
13.1	0.140	0.242	0.102	0.038
13.1	0.280	0.382	0.102	0.038
13.1	0.420	0.522	0.102	0.038
13.1	0.560	0.662	0.102	0.038
13.2	0.700	0.802	0.102	0.038
13.2	0.840	0.942	0.102	0.038
13.0	0.980	1.082	0.102	0.038
13.1	1.120	1.222	0.102	0.038
13.1	1.260	1.362	0.102	0.038
13.2	1.400	1.502	0.102	0.038
13.5	1.540	1.642	0.102	0.038
13.0	1.680	1.782	0.102	0.038
13.1	1.820	1.922	0.102	0.038
13.3	1.960	2.062	0.102	0.038
13.0	2.100	2.202	0.102	0.038
13.0	2.240	2.342	0.102	0.038
13.0	2.380	2.482	0.102	0.039
13.1	2.521	2.622	0.101	0.039
13.0	2.661	2.762	0.101	0.039
13.1	2.801	2.903	0.102	0.038
13.0	2.941	3.043	0.102	0.038
13.0	3.081	3.183	0.102	0.038
13.2	3.221	3.323	0.102	0.038
13.1	3.361	3.463	0.102	0.038
13.1	3.501	3.603	0.102	0.038
13.0	3.641	3.743	0.102	0.038
13.0	3.781	3.883	0.102	0.038
13.1	3.921	4.023	0.102	0.038
13.1	4.061	4.163	0.102	0.038
13.1	4.201	4.303	0.102	0.038
13.1	4.341	4.443	0.102	0.038
13.4	4.481	4.583	0.102	0.038
13.2	4.621	4.723	0.102	0.038

A.2 Power spectral density

Measuring Parameter

Frequency Range		
2400 MHz to 2483.5 MHz	RBW (MHz)	10 kHz
	VBW (MHz)	30 kHz
	Sweep points	8351
	Detector mode	RMS
	Trace mode	Max Hold
	Sweep time	100s

Test Data

Note 1: The Power density is ERIP Power density, which is contain antenna gain

Modulation Mode			802.11b		
Limit			10 dBm/MHz		
Test Result					
Test Method	Test Conditions		Power density (dBm/MHz)		
☐ Radiated ☒ Conducted	Temperature	Voltage	Low Channel Power Spectral density	Middle Channel Power Spectral density	High Channel Power Spectral density
	NT	NV	9.37	9.30	9.49
Test Verdict			Pass		

Modulation Mode			802.11g		
Limit			10 dBm/MHz		
Test Result					
Test Method	Test Conditions		Power density (dBm/MHz)		
☐ Radiated ☒ Conducted	Temperature	Voltage	Low Channel Power Spectral density	Middle Channel Power Spectral density	High Channel Power Spectral density
	NT	NV	4.49	4.45	3.67
Test Verdict			Pass		

Modulation Mode			802.11n(20 MHz)		
Limit			10 dBm/MHz		
Test Result					
Test Method	Test Conditions		Power density (dBm/MHz)		
☐ Radiated ☒ Conducted	Temperature	Voltage	Low Channel Power Spectral density	Middle Channel Power Spectral density	High Channel Power Spectral density
	NT	NV	3.05	2.85	1.97
Test Verdict			Pass		

A.3 Duty Cycle, Tx-sequence, Tx-gap

Note: The maximum value of Duty Cycle declared by the supplier.

Test Data

Duty Cycle (%)	Limit Duty Cycle (%)Note1	Number of Bursts	Minimum Tx-On (ms)	Maximum Tx-On (ms)	Minimum Tx-Off (ms)	Maximum Tx-Off (ms)	Measurement Time (ms)	Comment
--	--	--	--	--	--	--	--	--

Note: Not applicable.

A.4 Medium Utilization (MU) factor

Medium Utilization (MU) (%)	Limit Medium Utilization (MU) (%)	Verdict
--	10	--

Note: Not applicable.

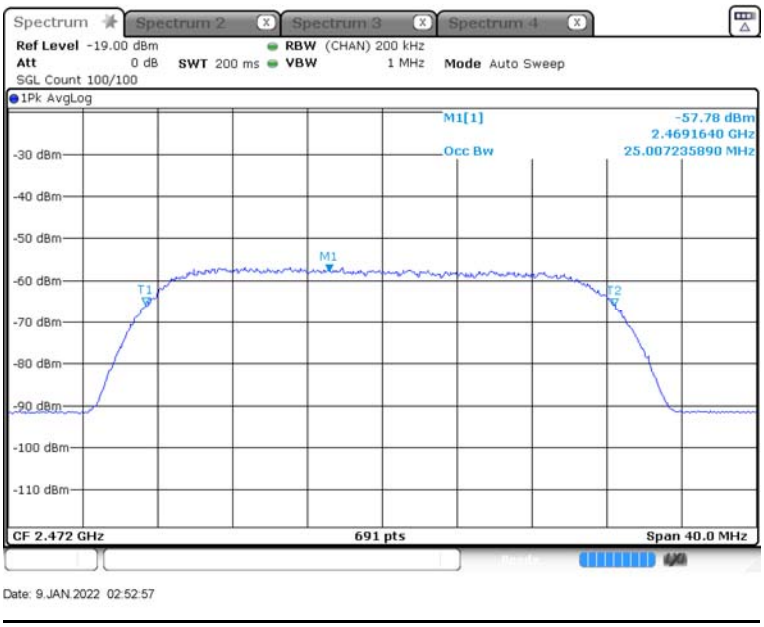
A.5 Adaptivity (adaptive equipment using modulations other than FHSS)

Test Method and Interference threshold level

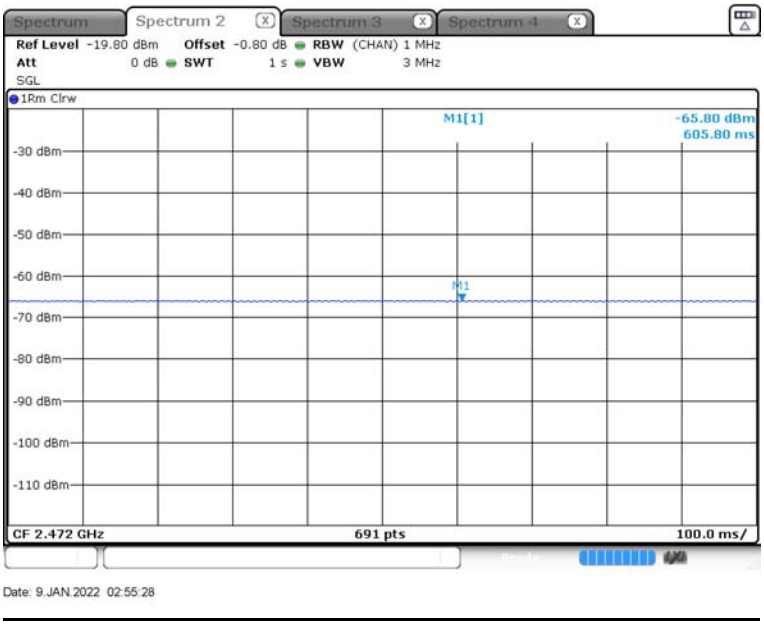
Test Method	Interference threshold level
☐ Radiated ☒ Conducted	The maximum EIRP power is 18.5 dBm and antenna gain is 2.5 dBi. Threshold level= -70 dBm/MHz + G + 10 × $\log_{10}$ (100 mW / Pout) = -66.00 dBm/MHz .The interference signal level to the UUT is -66.00 dBm/MHz

Test plot

99% Bandwidth (802.11b)



Threshold level (802.11b)



Test Data

Test step 1

Test Conditions	Test Result							
Temperature	Voltage	Test Mode	Frequency (MHz)	COT (ms)	Limit (ms)	CCA Time (μs)	Idle Period (ms)	Limit (μs)
NT	NV	802.11b	2412	4.31	13	95	0.095	18
			2472	4.31	13	95	0.095	18
		802.11g	2412	0.71	13	101	0.101	18
			2472	0.71	13	101	0.101	18
		802.11n (20 MHz)	2412	0.10	13	37	0.037	18
			2472	0.10	13	37	0.037	18
Note: Wanted signal mean power from companion device is -50 dBm/MHz.								
Test Verdict	Pass							

Test step 2

Note: The least monitoring time during the adaptivity test is 60s, please refer to the test plot as shown below.

Test step 2_2nd

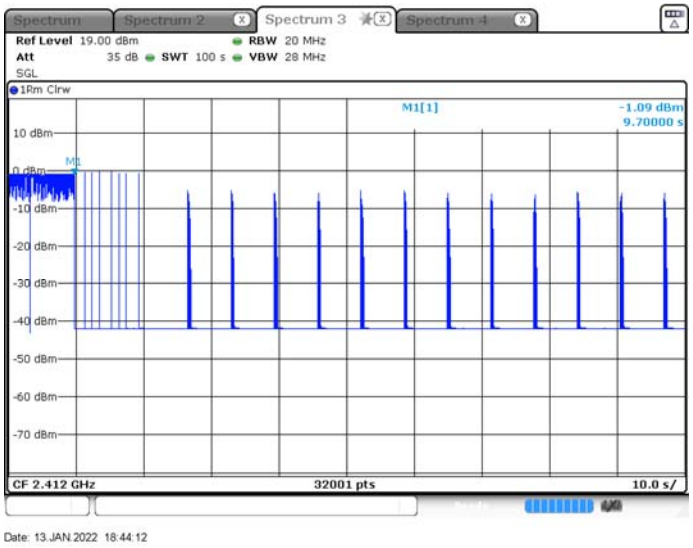
Temperature	Voltage	Test Mode	Frequency (MHz)	Number of Bursts	Short Signalling (%)	Limit (%)
NT	NV	802.11b	2412	6	7.8264	10
			2472	6	6.9564	10
		802.11g	2412	3	3.9132	10
			2472	1	1.1594	10
		802.11n (20 MHz)	2412	1	1.1594	10
			2472	0	0.0000	10

The step 3

Note: The least monitoring time during the blocking test is 60s, please refer to the test plot as shown below.

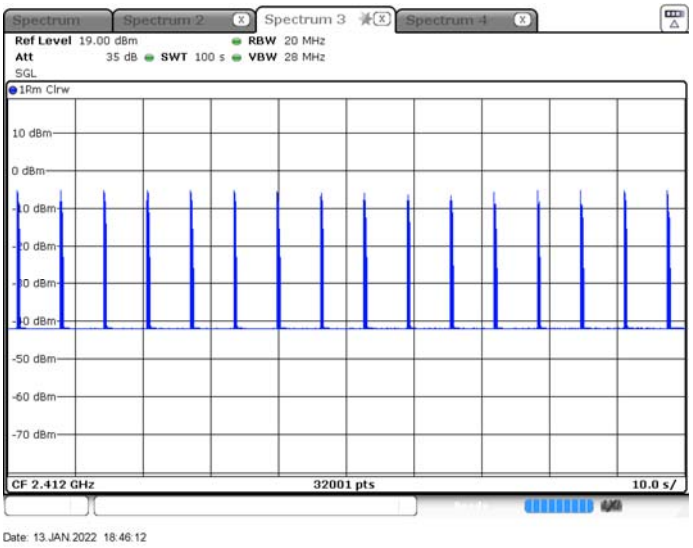
Test Plots

802.11b: Low Channel Step 2 Interferer on / Blocker off



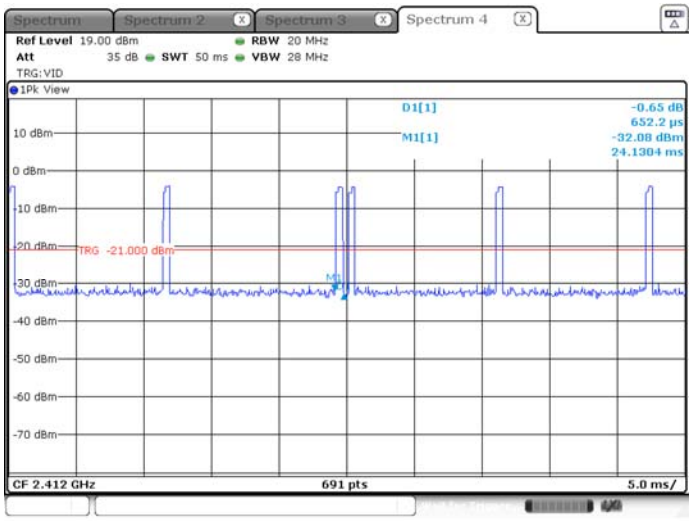
Date: 13.JAN.2022 18:44:12

802.11b: Low Channel Step 3 Interferer on / Blocker on



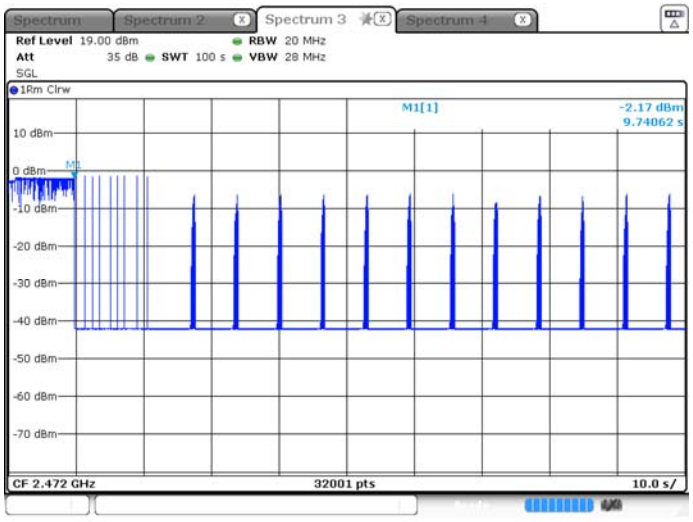
Date: 13.JAN.2022 18:46:12

802.11b: Low Channel Short Signalling



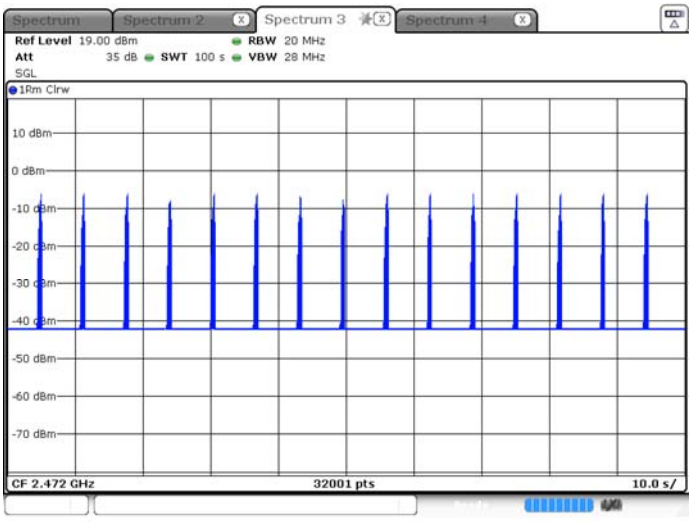
Date: 13.JAN.2022 18:47:10

802.11b: High Channel Step 2 Interferer on / Blocker off



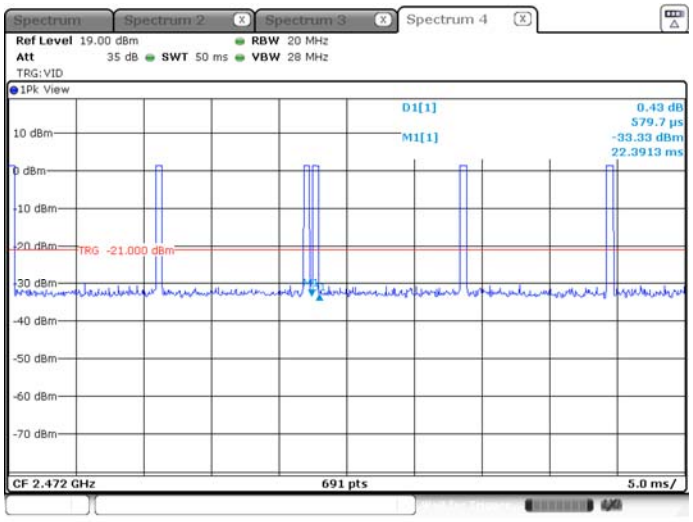
Date: 13.JAN.2022 18:52:01

802.11b: High Channel Step 3 Interferer on / Blocker on



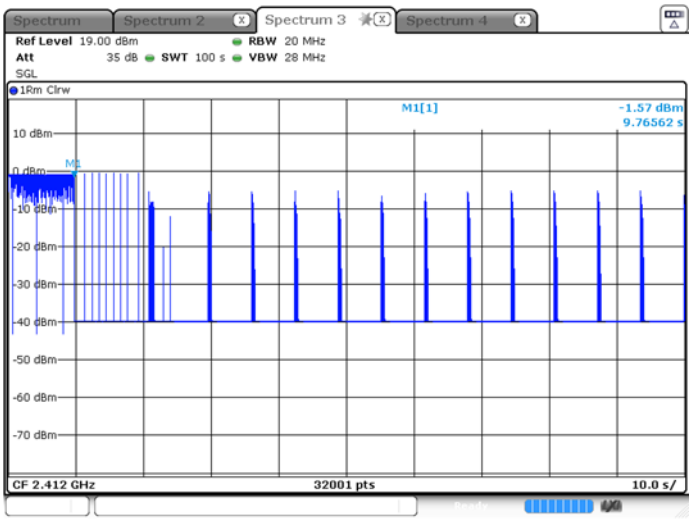
Date: 13.JAN.2022 18:54:03

802.11b: High Channel Short Signalling



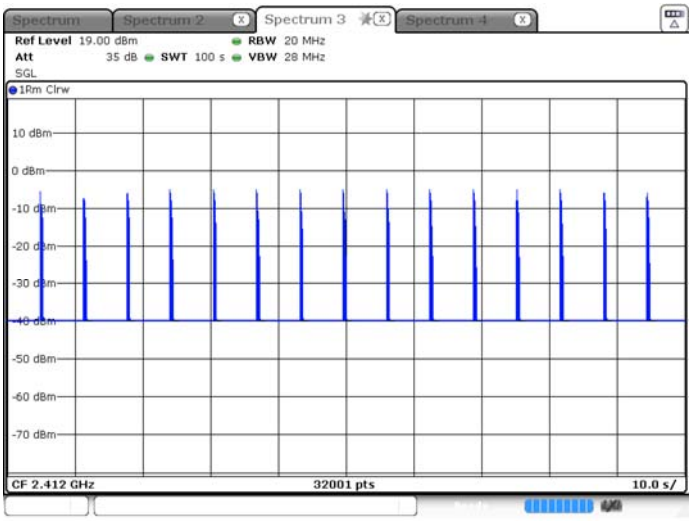
Date: 13.JAN.2022 18:54:45

802.11g: Low Channel Step 2 Interferer on / Blocker off



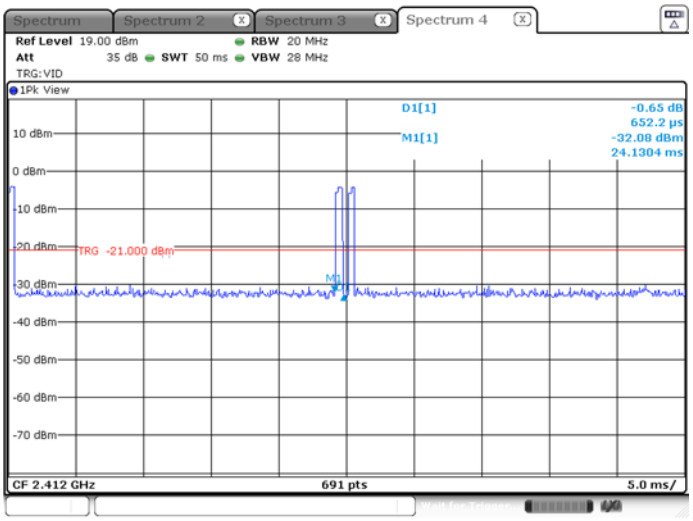
Date: 13.JAN.2022 19:08:12

802.11g: Low Channel Step 3 Interferer on / Blocker on



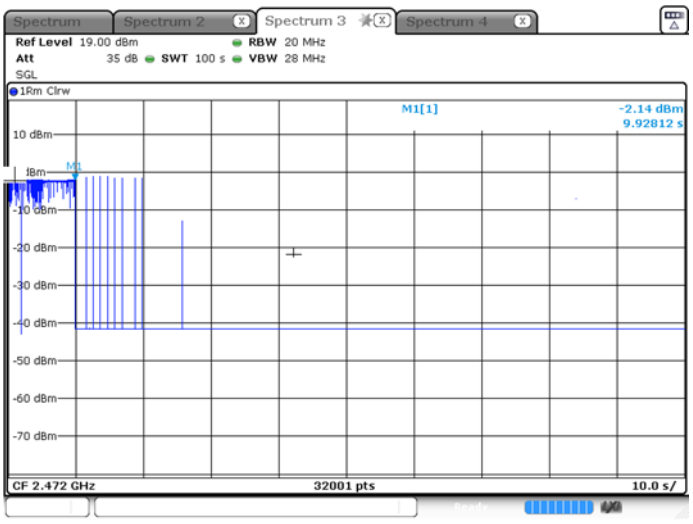
Date: 13.JAN.2022 19:10:04

802.11g: Low Channel Short Signalling



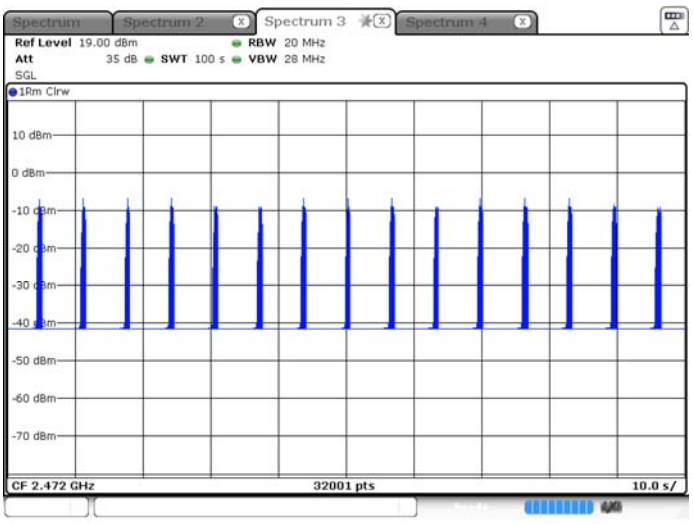
Date: 13.JAN.2022 19:11:40

802.11g: High Channel Step 2 Interferer on / Blocker off



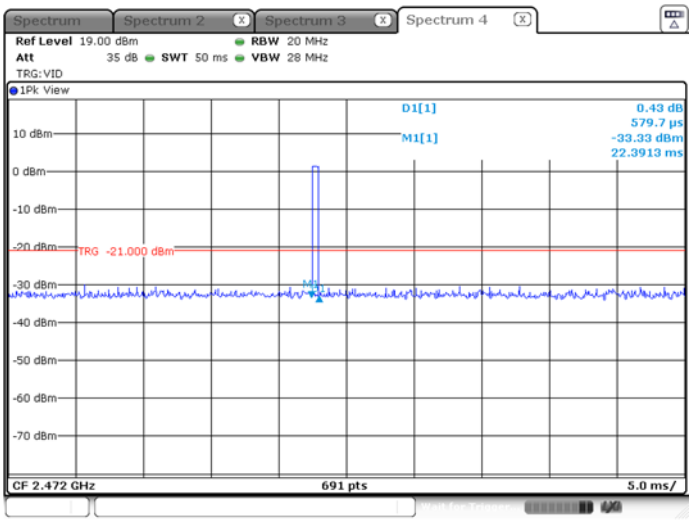
Date: 13.JAN.2022 18:58:59

802.11g: High Channel Step 3 Interferer on / Blocker on



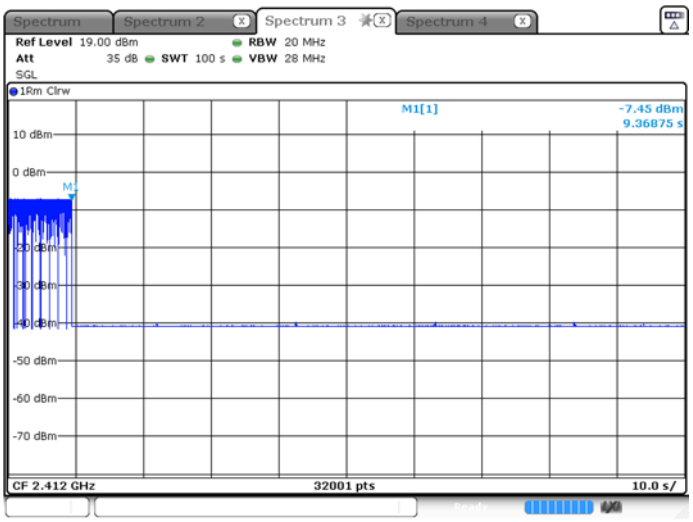
Date: 13.JAN.2022 19:00:54

802.11g: High Channel Short Signalling



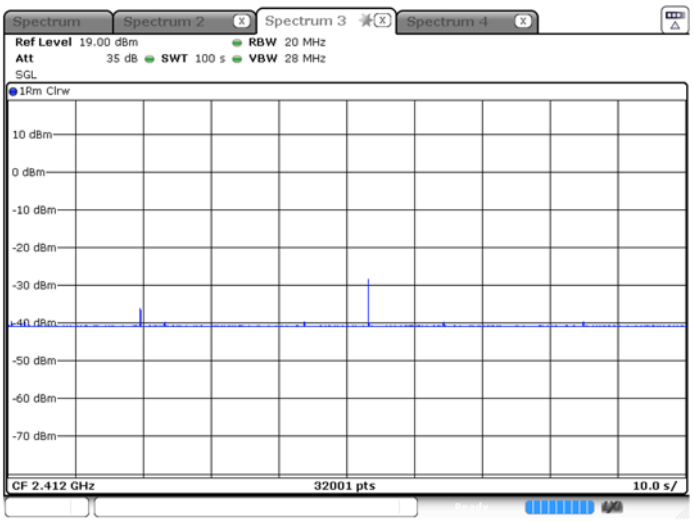
Date: 13.JAN.2022 19:02:22

802.11n(20 MHz): Low Channel Step 2 Interferer on / Blocker off



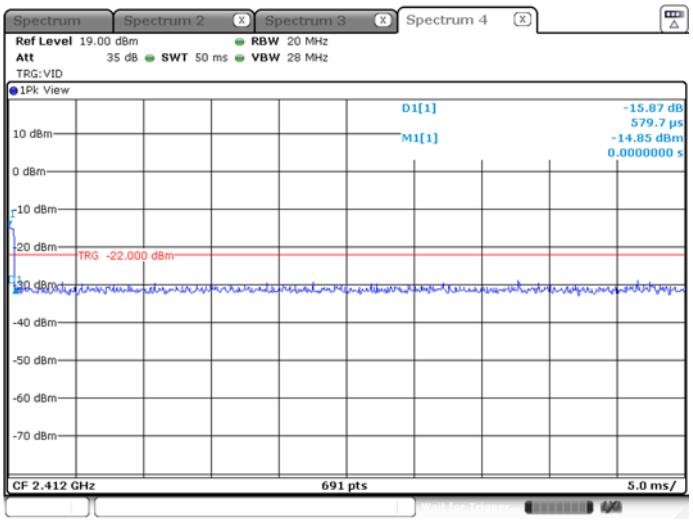
Date: 13.JAN.2022 19:56:27

802.11n(20 MHz): Low Channel Step 3 Interferer on / Blocker on



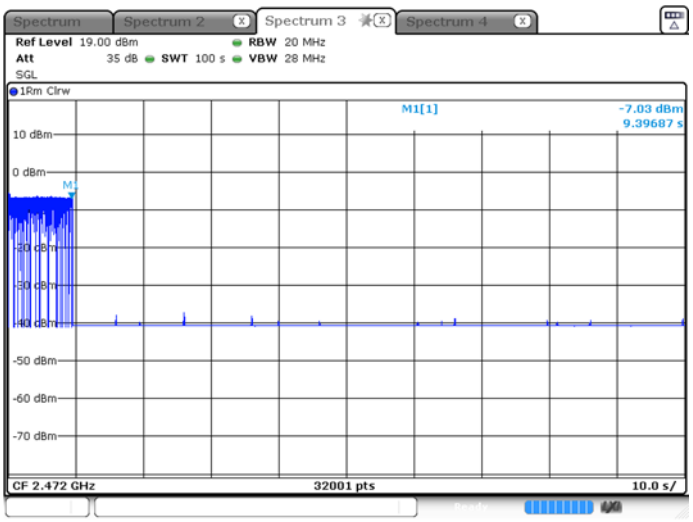
Date: 13.JAN.2022 19:58:32

802.11n(20 MHz): Low Channel Short Signalling



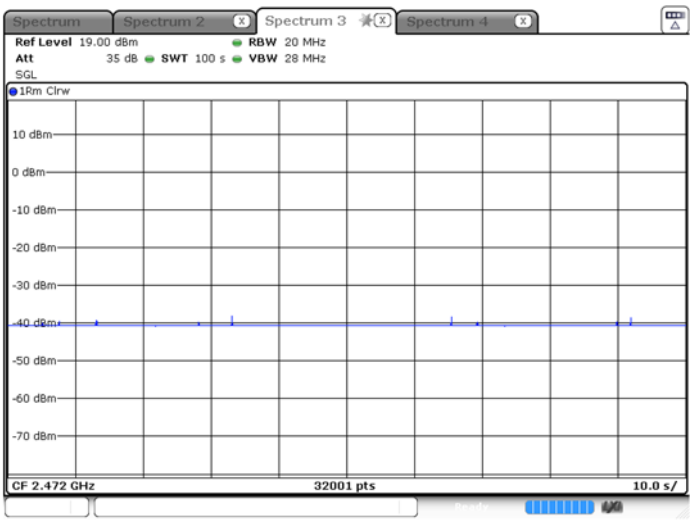
Date: 13.JAN.2022 20:00:46

802.11n(20 MHz): High Channel Step 2 Interferer on / Blocker off



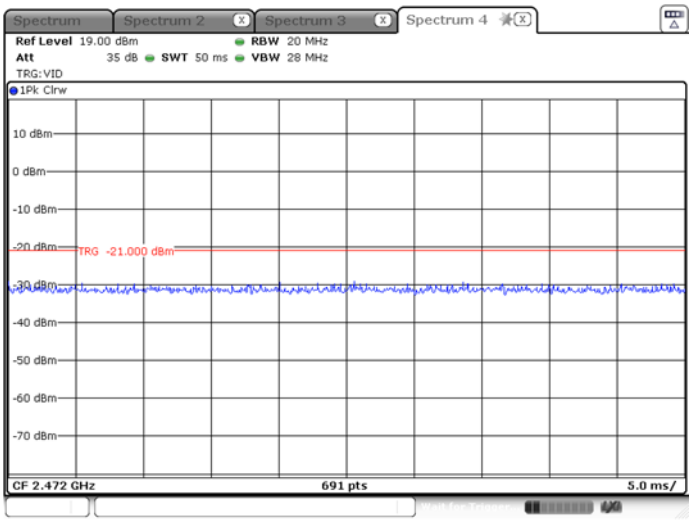
Date: 13.JAN.2022 20:04:27

802.11n(20 MHz): High Channel Step 3 Interferer on / Blocker on



Date: 13.JAN.2022 20:06:17

802.11n(20 MHz): High Channel Short Signalling



Date: 13.JAN.2022 20:07:29

A.6 Occupied Channel Bandwidth

Measuring Parameter

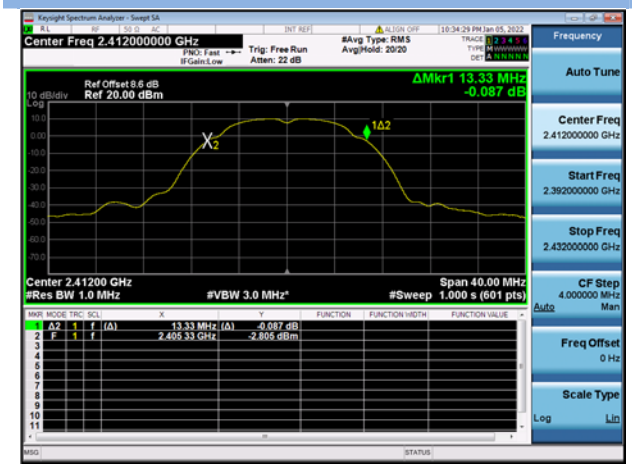
Centre Frequency	The centre frequency of the channel under test
RBW (MHz)	1 MHz
VBW (MHz)	3 MHz
Span (MHz)	40 MHz (for 20 MHz channel), 80 MHz (for 40 MHz channel)
Detector mode	RMS
Trace mode	Max Hold
Sweep time	Auto
Test Method	☐ Radiated ☒ Conducted

Test Data

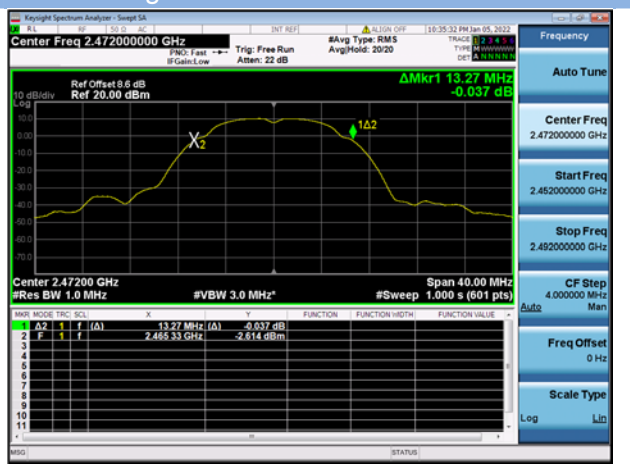
Test Conditions		Test Mode	DUT Frequency (MHz)	Occupied Channel Bandwidth (MHz)	Lower Band Edge (MHz)	Upper Band Edge (MHz)	Limit (MHz)
Temperature	Voltage						
NT	NV	802.11b	2412	13.33	2405.333252	2418.663252	Within The Band 2400 MHz to 2483.5 MHz
			2472	13.27	2465.333252	2478.603252	
		802.11g	2412	17.13	2403.399902	2420.529902	
			2472	17.13	2463.399902	2480.529902	
		802.11n (20 MHz)	2412	18.00	2403.000000	2421.000000	
			2472	17.93	2463.000000	2480.930000	
Test Verdict		Pass					

Test Plots

802.11b: Low Channel



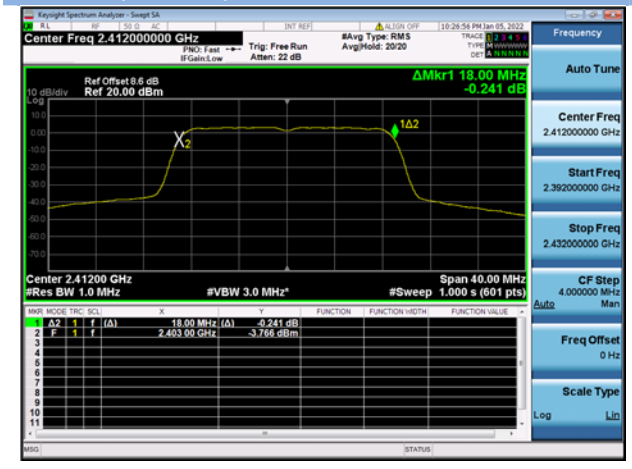
802.11b: High Channel



802.11g: Low Channel

802.11g: High Channel

802.11n(20 MHz): Low Channel



802.11n(20 MHz): High Channel

A.7 Transmitter unwanted emissions in the out-of-band domain

Test Data

802.11b

DUT Frequency (MHz)	Nominal Bandwidth (MHz)	Frequency (MHz)	Level (dBm)	Limit (dBm)	Result
2412	20	2380.0	-41.701	-10	PASS
2412	20	2381.0	-41.674	-10	PASS
2412	20	2382.0	-41.014	-10	PASS
2412	20	2383.0	-39.918	-10	PASS
2412	20	2384.0	-39.001	-10	PASS
2412	20	2385.0	-38.445	-10	PASS
2412	20	2386.0	-37.972	-10	PASS
2412	20	2387.0	-36.863	-10	PASS
2412	20	2388.0	-36.786	-10	PASS
2412	20	2389.0	-35.626	-10	PASS
2412	20	2390.0	-35.181	-10	PASS
2412	20	2391.0	-34.545	-10	PASS
2412	20	2392.0	-34.061	-10	PASS
2412	20	2393.0	-32.972	-10	PASS
2412	20	2394.0	-32.432	-10	PASS
2412	20	2395.0	-31.842	-10	PASS
2412	20	2396.0	-30.589	-10	PASS
2412	20	2397.0	-29.630	-10	PASS
2412	20	2398.0	-28.516	-10	PASS
2412	20	2399.0	-27.546	-10	PASS
2412	20	2400.0	-26.295	-10	PASS
2412	20	2360.0	-43.744	-20	PASS
2412	20	2361.0	-43.352	-20	PASS
2412	20	2362.0	-43.316	-20	PASS
2412	20	2363.0	-43.442	-20	PASS
2412	20	2364.0	-43.494	-20	PASS
2412	20	2365.0	-43.288	-20	PASS
2412	20	2366.0	-43.662	-20	PASS
2412	20	2367.0	-43.492	-20	PASS
2412	20	2368.0	-43.622	-20	PASS
2412	20	2369.0	-43.924	-20	PASS
2412	20	2370.0	-43.751	-20	PASS
2412	20	2371.0	-43.889	-20	PASS
2412	20	2372.0	-44.171	-20	PASS
2412	20	2373.0	-43.563	-20	PASS
2412	20	2374.0	-43.632	-20	PASS
2412	20	2375.0	-43.880	-20	PASS
2412	20	2376.0	-43.476	-20	PASS

2412	20	2377.0	-43.038	-20	PASS
2412	20	2378.0	-42.265	-20	PASS
2412	20	2379.0	-42.237	-20	PASS
2472	20	2483.5	-27.440	-10	PASS
2472	20	2484.5	-29.888	-10	PASS
2472	20	2485.5	-31.407	-10	PASS
2472	20	2486.5	-32.621	-10	PASS
2472	20	2487.5	-33.507	-10	PASS
2472	20	2488.5	-33.828	-10	PASS
2472	20	2489.5	-35.195	-10	PASS
2472	20	2490.5	-36.274	-10	PASS
2472	20	2491.5	-37.304	-10	PASS
2472	20	2492.5	-37.746	-10	PASS
2472	20	2493.5	-38.444	-10	PASS
2472	20	2494.5	-39.784	-10	PASS
2472	20	2495.5	-40.925	-10	PASS
2472	20	2496.5	-40.792	-10	PASS
2472	20	2497.5	-41.220	-10	PASS
2472	20	2498.5	-42.365	-10	PASS
2472	20	2499.5	-42.528	-10	PASS
2472	20	2500.5	-43.143	-10	PASS
2472	20	2501.5	-43.143	-10	PASS
2472	20	2502.5	-43.571	-10	PASS
2472	20	2503.5	-43.604	-10	PASS
2472	20	2504.5	-44.093	-20	PASS
2472	20	2505.5	-43.898	-20	PASS
2472	20	2506.5	-43.385	-20	PASS
2472	20	2507.5	-44.018	-20	PASS
2472	20	2508.5	-43.906	-20	PASS
2472	20	2509.5	-44.251	-20	PASS
2472	20	2510.5	-44.061	-20	PASS
2472	20	2511.5	-44.454	-20	PASS
2472	20	2512.5	-44.118	-20	PASS
2472	20	2513.5	-44.435	-20	PASS
2472	20	2514.5	-43.702	-20	PASS
2472	20	2515.5	-43.952	-20	PASS
2472	20	2516.5	-44.180	-20	PASS
2472	20	2517.5	-43.557	-20	PASS
2472	20	2518.5	-43.951	-20	PASS
2472	20	2519.5	-44.454	-20	PASS
2472	20	2520.5	-44.150	-20	PASS
2472	20	2521.5	-43.441	-20	PASS
2472	20	2522.5	-44.058	-20	PASS

802.11g

DUT Frequency (MHz)	Nominal Bandwidth (MHz)	Frequency (MHz)	Level (dBm)	Limit (dBm)	Result
2412	20	2380.0	-43.063	-10	PASS
2412	20	2381.0	-42.588	-10	PASS
2412	20	2382.0	-42.460	-10	PASS
2412	20	2383.0	-41.675	-10	PASS
2412	20	2384.0	-41.345	-10	PASS
2412	20	2385.0	-40.382	-10	PASS
2412	20	2386.0	-40.549	-10	PASS
2412	20	2387.0	-38.837	-10	PASS
2412	20	2388.0	-38.001	-10	PASS
2412	20	2389.0	-36.871	-10	PASS
2412	20	2390.0	-35.863	-10	PASS
2412	20	2391.0	-34.509	-10	PASS
2412	20	2392.0	-32.860	-10	PASS
2412	20	2393.0	-32.353	-10	PASS
2412	20	2394.0	-31.530	-10	PASS
2412	20	2395.0	-30.771	-10	PASS
2412	20	2396.0	-30.436	-10	PASS
2412	20	2397.0	-29.196	-10	PASS
2412	20	2398.0	-28.532	-10	PASS
2412	20	2399.0	-29.415	-10	PASS
2412	20	2400.0	-28.246	-10	PASS
2412	20	2360.0	-43.849	-20	PASS
2412	20	2361.0	-44.264	-20	PASS
2412	20	2362.0	-44.101	-20	PASS
2412	20	2363.0	-44.372	-20	PASS
2412	20	2364.0	-44.278	-20	PASS
2412	20	2365.0	-44.182	-20	PASS
2412	20	2366.0	-43.384	-20	PASS
2412	20	2367.0	-43.784	-20	PASS
2412	20	2368.0	-43.958	-20	PASS
2412	20	2369.0	-44.163	-20	PASS
2412	20	2370.0	-43.702	-20	PASS
2412	20	2371.0	-43.612	-20	PASS
2412	20	2372.0	-43.978	-20	PASS
2412	20	2373.0	-43.804	-20	PASS
2412	20	2374.0	-43.845	-20	PASS
2412	20	2375.0	-43.756	-20	PASS
2412	20	2376.0	-43.923	-20	PASS
2412	20	2377.0	-43.638	-20	PASS
2412	20	2378.0	-43.898	-20	PASS

2412	20	2379.0	-43.197	-20	PASS
2472	20	2483.5	-31.154	-10	PASS
2472	20	2484.5	-30.883	-10	PASS
2472	20	2485.5	-31.190	-10	PASS
2472	20	2486.5	-32.488	-10	PASS
2472	20	2487.5	-32.448	-10	PASS
2472	20	2488.5	-33.502	-10	PASS
2472	20	2489.5	-33.941	-10	PASS
2472	20	2490.5	-34.290	-10	PASS
2472	20	2491.5	-33.044	-10	PASS
2472	20	2492.5	-35.816	-10	PASS
2472	20	2493.5	-35.472	-10	PASS
2472	20	2494.5	-36.944	-10	PASS
2472	20	2495.5	-38.357	-10	PASS
2472	20	2496.5	-38.701	-10	PASS
2472	20	2497.5	-38.703	-10	PASS
2472	20	2498.5	-40.295	-10	PASS
2472	20	2499.5	-40.750	-10	PASS
2472	20	2500.5	-41.753	-10	PASS
2472	20	2501.5	-41.960	-10	PASS
2472	20	2502.5	-42.471	-10	PASS
2472	20	2503.5	-42.660	-10	PASS
2472	20	2504.5	-43.011	-20	PASS
2472	20	2505.5	-43.760	-20	PASS
2472	20	2506.5	-43.656	-20	PASS
2472	20	2507.5	-44.265	-20	PASS
2472	20	2508.5	-43.715	-20	PASS
2472	20	2509.5	-44.084	-20	PASS
2472	20	2510.5	-43.610	-20	PASS
2472	20	2511.5	-44.269	-20	PASS
2472	20	2512.5	-44.114	-20	PASS
2472	20	2513.5	-43.866	-20	PASS
2472	20	2514.5	-44.201	-20	PASS
2472	20	2515.5	-44.061	-20	PASS
2472	20	2516.5	-43.973	-20	PASS
2472	20	2517.5	-43.977	-20	PASS
2472	20	2518.5	-44.030	-20	PASS
2472	20	2519.5	-43.907	-20	PASS
2472	20	2520.5	-44.443	-20	PASS
2472	20	2521.5	-44.576	-20	PASS
2472	20	2522.5	-44.639	-20	PASS

802.11n(20 MHz)

DUT Frequency (MHz)	Nominal Bandwidth (MHz)	Frequency (MHz)	Level (dBm)	Limit (dBm)	Result
2412	20	2380.0	-40.672	-10	PASS
2412	20	2381.0	-41.147	-10	PASS
2412	20	2382.0	-40.311	-10	PASS
2412	20	2383.0	-37.794	-10	PASS
2412	20	2384.0	-38.990	-10	PASS
2412	20	2385.0	-38.668	-10	PASS
2412	20	2386.0	-37.760	-10	PASS
2412	20	2387.0	-36.669	-10	PASS
2412	20	2388.0	-35.984	-10	PASS
2412	20	2389.0	-34.721	-10	PASS
2412	20	2390.0	-32.533	-10	PASS
2412	20	2391.0	-31.795	-10	PASS
2412	20	2392.0	-30.346	-10	PASS
2412	20	2393.0	-30.904	-10	PASS
2412	20	2394.0	-29.970	-10	PASS
2412	20	2395.0	-29.736	-10	PASS
2412	20	2396.0	-28.986	-10	PASS
2412	20	2397.0	-27.750	-10	PASS
2412	20	2398.0	-28.058	-10	PASS
2412	20	2399.0	-26.116	-10	PASS
2412	20	2400.0	-27.015	-10	PASS
2412	20	2360.0	-43.667	-20	PASS
2412	20	2361.0	-43.878	-20	PASS
2412	20	2362.0	-44.199	-20	PASS
2412	20	2363.0	-44.153	-20	PASS
2412	20	2364.0	-44.016	-20	PASS
2412	20	2365.0	-43.699	-20	PASS
2412	20	2366.0	-43.691	-20	PASS
2412	20	2367.0	-43.787	-20	PASS
2412	20	2368.0	-43.344	-20	PASS
2412	20	2369.0	-43.942	-20	PASS
2412	20	2370.0	-43.370	-20	PASS
2412	20	2371.0	-43.702	-20	PASS
2412	20	2372.0	-43.725	-20	PASS
2412	20	2373.0	-43.825	-20	PASS
2412	20	2374.0	-43.481	-20	PASS
2412	20	2375.0	-43.613	-20	PASS
2412	20	2376.0	-43.308	-20	PASS
2412	20	2377.0	-43.423	-20	PASS
2412	20	2378.0	-42.343	-20	PASS

2412	20	2379.0	-41.419	-20	PASS
2472	20	2483.5	-29.043	-10	PASS
2472	20	2484.5	-30.879	-10	PASS
2472	20	2485.5	-29.515	-10	PASS
2472	20	2486.5	-31.149	-10	PASS
2472	20	2487.5	-30.019	-10	PASS
2472	20	2488.5	-31.957	-10	PASS
2472	20	2489.5	-33.746	-10	PASS
2472	20	2490.5	-34.651	-10	PASS
2472	20	2491.5	-34.910	-10	PASS
2472	20	2492.5	-34.536	-10	PASS
2472	20	2493.5	-35.627	-10	PASS
2472	20	2494.5	-37.016	-10	PASS
2472	20	2495.5	-36.727	-10	PASS
2472	20	2496.5	-38.521	-10	PASS
2472	20	2497.5	-39.179	-10	PASS
2472	20	2498.5	-40.874	-10	PASS
2472	20	2499.5	-41.118	-10	PASS
2472	20	2500.5	-40.805	-10	PASS
2472	20	2501.5	-41.924	-10	PASS
2472	20	2502.5	-42.427	-10	PASS
2472	20	2503.5	-43.377	-10	PASS
2472	20	2504.5	-43.947	-20	PASS
2472	20	2505.5	-43.881	-20	PASS
2472	20	2506.5	-44.220	-20	PASS
2472	20	2507.5	-44.347	-20	PASS
2472	20	2508.5	-44.352	-20	PASS
2472	20	2509.5	-44.929	-20	PASS
2472	20	2510.5	-44.595	-20	PASS
2472	20	2511.5	-44.193	-20	PASS
2472	20	2512.5	-44.461	-20	PASS
2472	20	2513.5	-44.318	-20	PASS
2472	20	2514.5	-44.582	-20	PASS
2472	20	2515.5	-44.866	-20	PASS
2472	20	2516.5	-44.815	-20	PASS
2472	20	2517.5	-44.778	-20	PASS
2472	20	2518.5	-44.418	-20	PASS
2472	20	2519.5	-44.313	-20	PASS
2472	20	2520.5	-44.781	-20	PASS
2472	20	2521.5	-44.915	-20	PASS
2472	20	2522.5	-45.076	-20	PASS

A.8 Transmitter unwanted emissions in the spurious domain

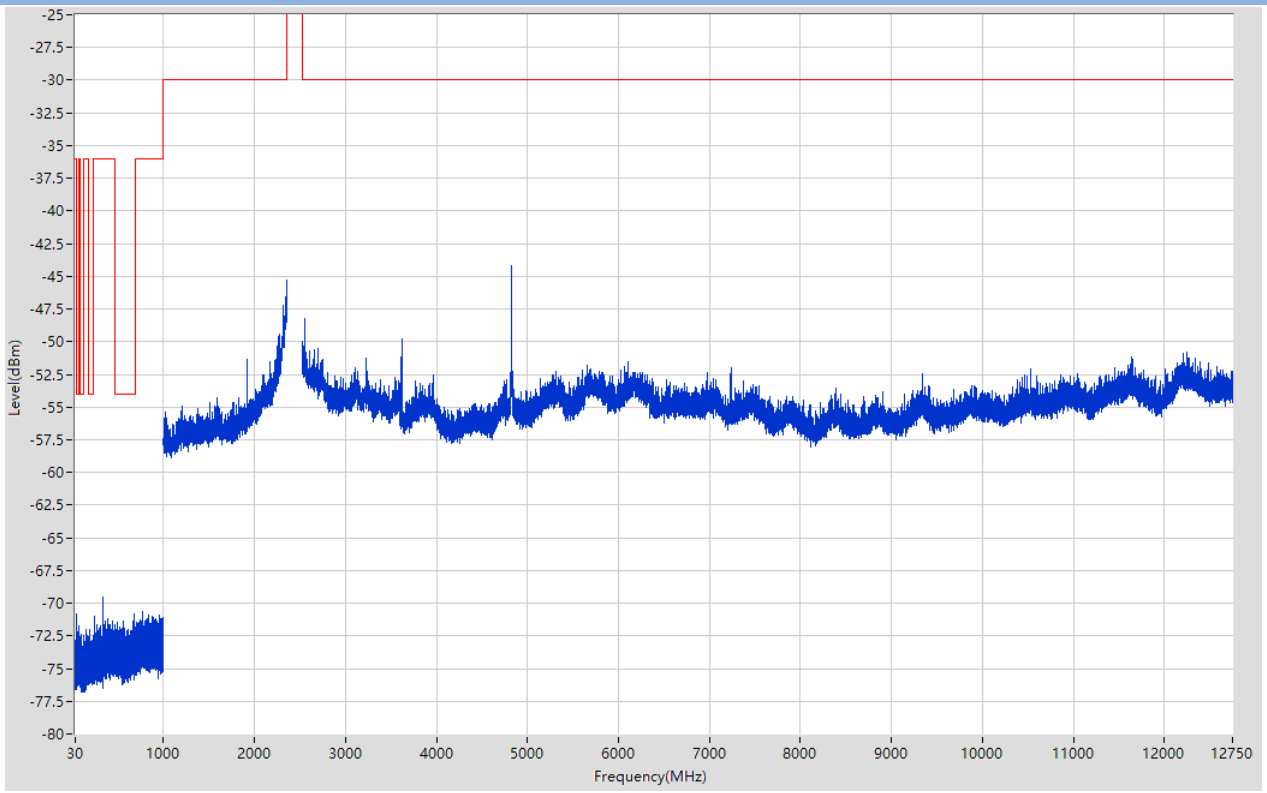
Note [1]: The test method choose the conducted method. Which power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment (cabinet radiation).
Note [2]: The Frequency band was pre-scanned, the harmonic and other spurious which worst frequency are recorded in the report.
Note [3]: The cabinet radiated test data is tested in the normal working mode of the product.

Measuring Parameter

Frequency Range		
30 MHz to 1 000 MHz	RBW (MHz)	100 kHz
	VBW (MHz)	300 kHz
	Sweep points	9970
	Detector mode	Peak
	Trace mode	Max Hold
1 GHz to 12,75 GHz	RBW (MHz)	1 MHz
	VBW (MHz)	3 MHz
	Sweep points	11750
	Detector mode	Peak
	Trace mode	Max Hold

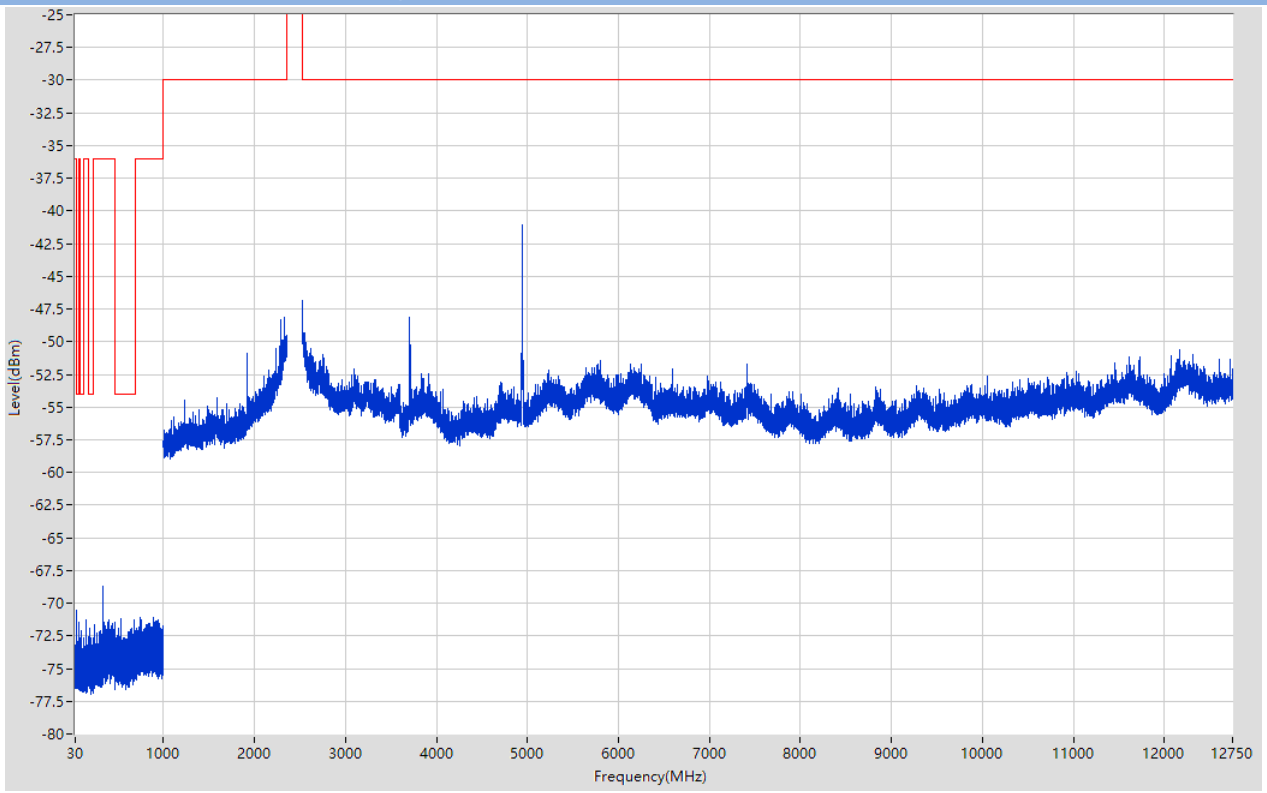
Conducted Test Data

802.11b, 30 MHz to 12.75 GHz, Low Channel



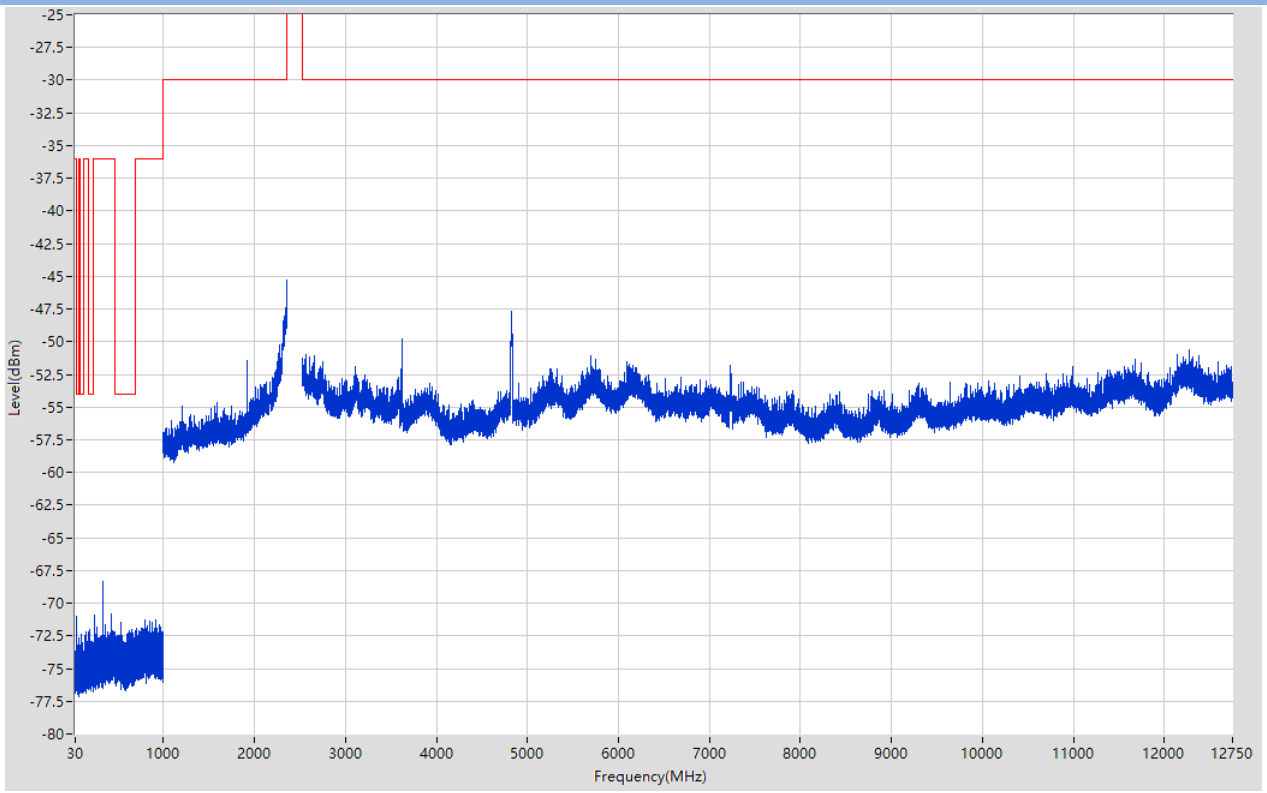
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	47	0.1	Peak	32.89	-72.86	-36	Pass	401
47	74	0.1	Peak	48.05	-70.82	-54	Pass	541
74	87.5	0.1	Peak	78.151	-72.59	-36	Pass	401
87.5	118	0.1	Peak	98.15	-72.36	-54	Pass	611
118	174	0.1	Peak	144	-71.97	-36	Pass	1121
174	230	0.1	Peak	182.1	-72	-54	Pass	1121
230	470	0.1	Peak	336	-69.53	-36	Pass	4801
470	694	0.1	Peak	680.05	-70.81	-54	Pass	4481
694	1000	0.1	Peak	767.25	-70.59	-36	Pass	6121
1000	2360	1	Peak	2358.541	-45.32	-30	Pass	2797
2523.5	12750	1	Peak	4823.952	-44.2	-30	Pass	20530

802.11b, 30 MHz to 12.75 GHz, High Channel



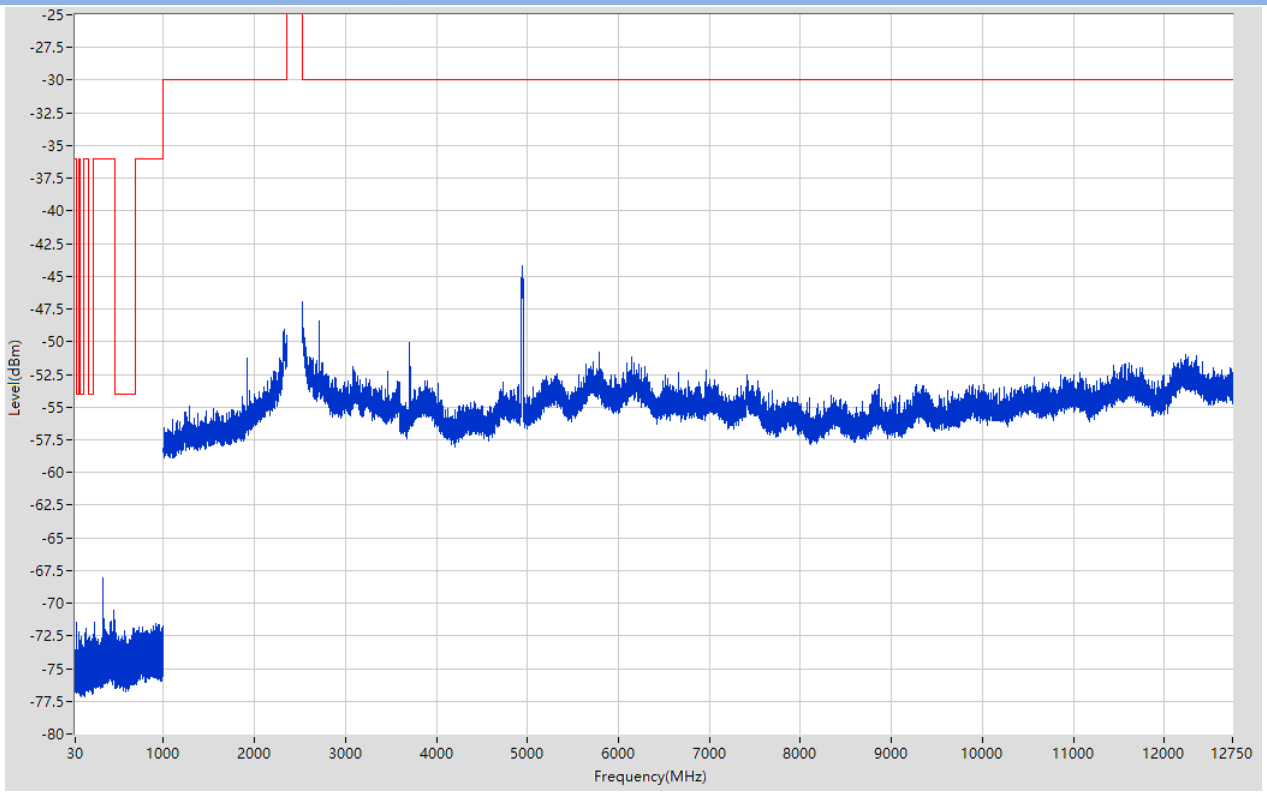
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	47	0.1	Peak	38.84	-73.03	-36	Pass	401
47	74	0.1	Peak	48	-70.5	-54	Pass	541
74	87.5	0.1	Peak	76.734	-72.88	-36	Pass	401
87.5	118	0.1	Peak	96.05	-72.14	-54	Pass	611
118	174	0.1	Peak	143.95	-71.26	-36	Pass	1121
174	230	0.1	Peak	193.6	-71.91	-54	Pass	1121
230	470	0.1	Peak	336	-68.73	-36	Pass	4801
470	694	0.1	Peak	530.9	-71.22	-54	Pass	4481
694	1000	0.1	Peak	889.7	-71.05	-36	Pass	6121
1000	2360	1	Peak	2330.329	-48.17	-30	Pass	2797
2523.5	12750	1	Peak	4944.006	-41.09	-30	Pass	20530

802.11g, 30 MHz to 12.75 GHz, Low Channel



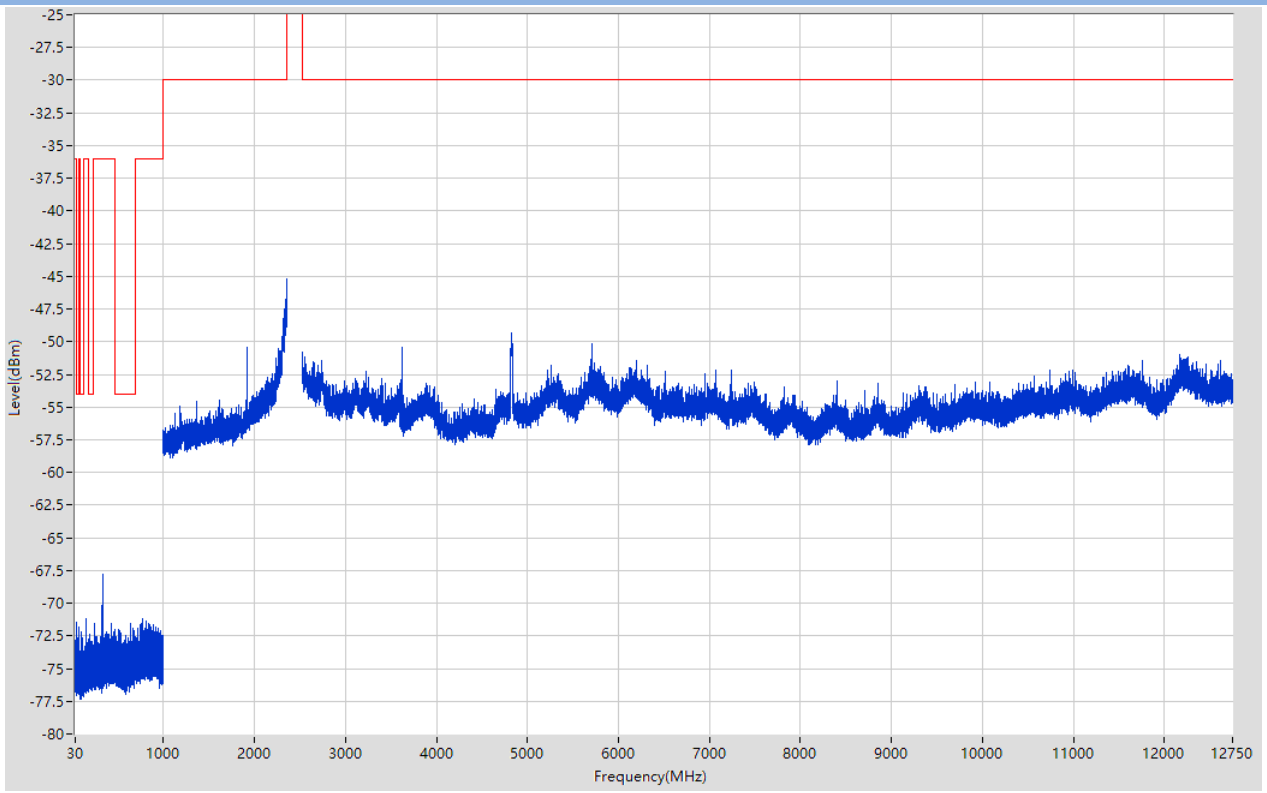
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	47	0.1	Peak	42.665	-72.39	-36	Pass	401
47	74	0.1	Peak	48	-70.98	-54	Pass	541
74	87.5	0.1	Peak	82.235	-73.19	-36	Pass	401
87.5	118	0.1	Peak	96	-72.36	-54	Pass	611
118	174	0.1	Peak	144	-72.19	-36	Pass	1121
174	230	0.1	Peak	193.1	-72.04	-54	Pass	1121
230	470	0.1	Peak	335.95	-68.31	-36	Pass	4801
470	694	0.1	Peak	531.2	-71.47	-54	Pass	4481
694	1000	0.1	Peak	791.85	-71.26	-36	Pass	6121
1000	2360	1	Peak	2358.054	-45.25	-30	Pass	2797
2523.5	12750	1	Peak	4830.428	-47.66	-30	Pass	20530

802.11g, 30 MHz to 12.75 GHz, High Channel



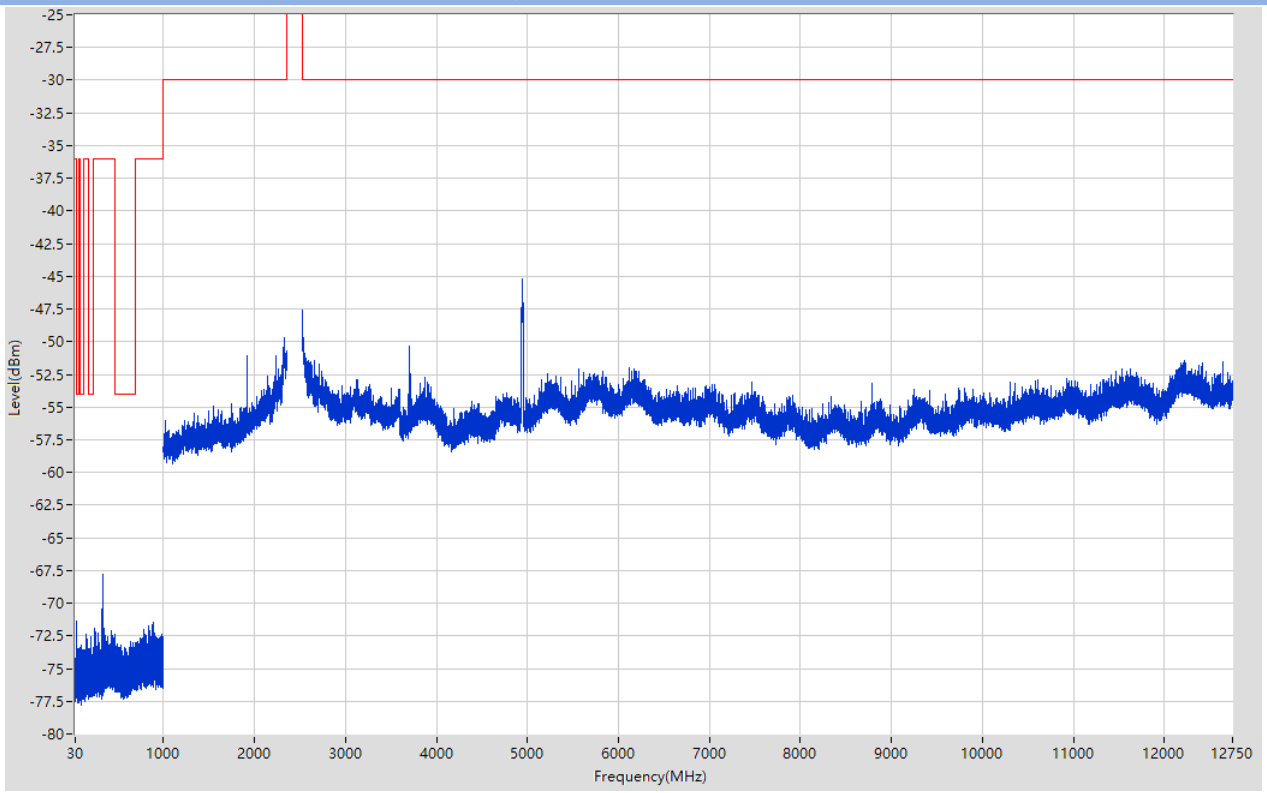
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	47	0.1	Peak	46.915	-72.62	-36	Pass	401
47	74	0.1	Peak	48	-71.45	-54	Pass	541
74	87.5	0.1	Peak	85.374	-73.19	-36	Pass	401
87.5	118	0.1	Peak	96	-72.58	-54	Pass	611
118	174	0.1	Peak	144	-71.91	-36	Pass	1121
174	230	0.1	Peak	192	-72.57	-54	Pass	1121
230	470	0.1	Peak	336	-68.1	-36	Pass	4801
470	694	0.1	Peak	660.1	-71.9	-54	Pass	4481
694	1000	0.1	Peak	911.05	-71.52	-36	Pass	6121
1000	2360	1	Peak	2324.979	-49.05	-30	Pass	2797
2523.5	12750	1	Peak	4944.504	-44.16	-30	Pass	20530

802.11n(20 MHz), 30 MHz to 12.75 GHz, Low Channel



Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	47	0.1	Peak	34.42	-72.8	-36	Pass	401
47	74	0.1	Peak	48	-71.48	-54	Pass	541
74	87.5	0.1	Peak	85.374	-73.68	-36	Pass	401
87.5	118	0.1	Peak	96	-72.18	-54	Pass	611
118	174	0.1	Peak	144.05	-71.16	-36	Pass	1121
174	230	0.1	Peak	191.9	-72.36	-54	Pass	1121
230	470	0.1	Peak	336	-67.83	-36	Pass	4801
470	694	0.1	Peak	639.1	-71.53	-54	Pass	4481
694	1000	0.1	Peak	771.6	-71.15	-36	Pass	6121
1000	2360	1	Peak	2359.514	-45.17	-30	Pass	2797
2523.5	12750	1	Peak	4823.454	-49.32	-30	Pass	20530

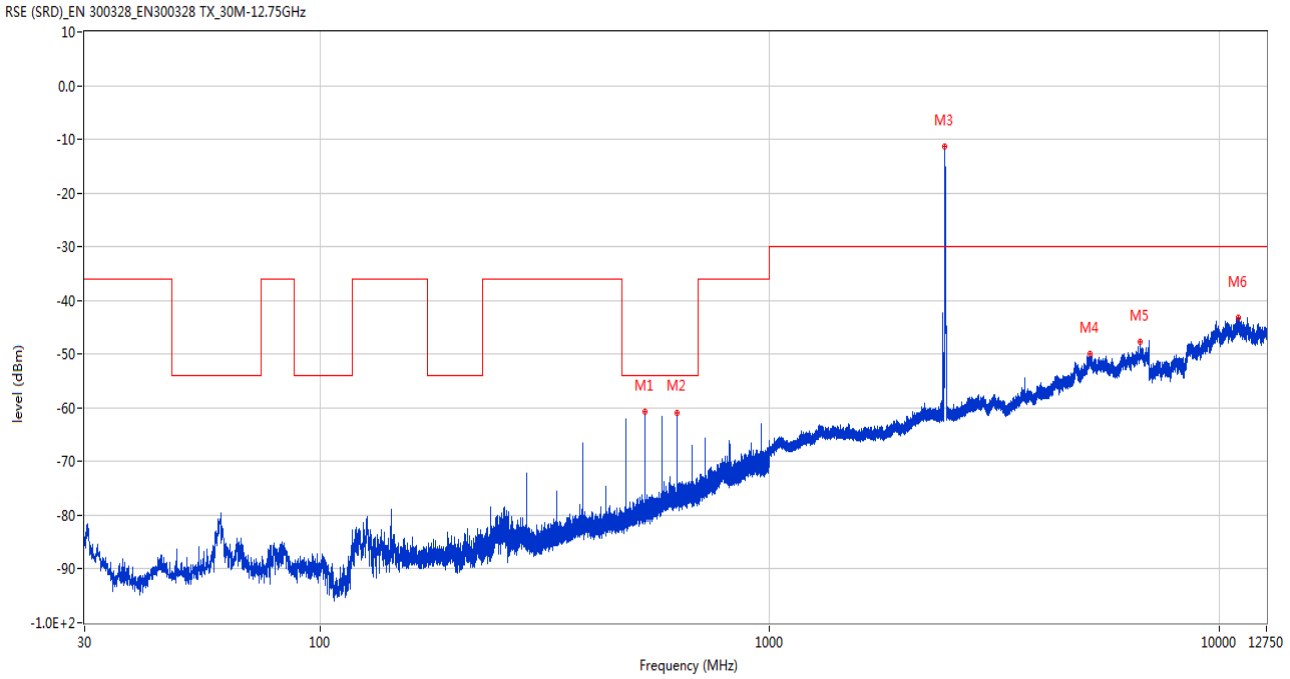
802.11n(20 MHz), 30 MHz to 12.75 GHz, High Channel



Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	47	0.1	Peak	37.82	-73.76	-36	Pass	401
47	74	0.1	Peak	48	-71.37	-54	Pass	541
74	87.5	0.1	Peak	86.656	-73.39	-36	Pass	401
87.5	118	0.1	Peak	96	-73.23	-54	Pass	611
118	174	0.1	Peak	144.05	-72.4	-36	Pass	1121
174	230	0.1	Peak	205.95	-72.54	-54	Pass	1121
230	470	0.1	Peak	336	-67.8	-36	Pass	4801
470	694	0.1	Peak	631.2	-72.95	-54	Pass	4481
694	1000	0.1	Peak	886.85	-71.49	-36	Pass	6121
1000	2360	1	Peak	2325.951	-49.74	-30	Pass	2797
2523.5	12750	1	Peak	4941.515	-45.17	-30	Pass	20530

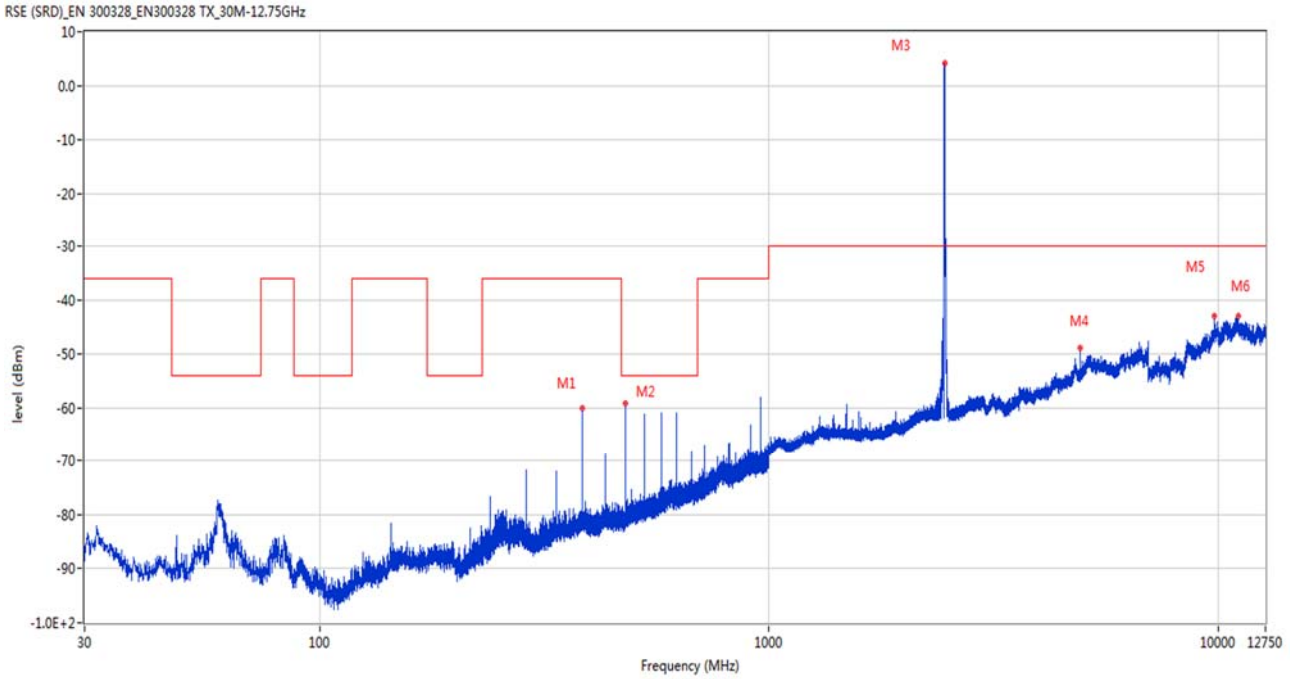
Cabinet Radiation Test Data

30 MHz to 12.75 GHz, ANT H



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
528.046	-60.79	-5.87	-54.0	-6.79	173.00	Horizontal	Horizontal	Pass
624.028	-60.83	-2.53	-54.0	-6.83	173.00	Horizontal	Horizontal	Pass
2457.600	-11.30	-1.24	-30.0	18.70	122.00	Horizontal	Horizontal	N/A
5171.600	-49.92	10.58	-30.0	-19.92	322.00	Horizontal	Horizontal	Pass
6686.800	-47.67	12.56	-30.0	-17.67	25.00	Horizontal	Horizontal	Pass
11020.112	-43.11	18.60	-30.0	-13.11	111.00	Horizontal	Horizontal	Pass

30 MHz to 12.75 GHz, ANT V



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
384.050	-59.96	-8.73	-36.0	-23.96	145.00	Vertical	Horizontal	Pass
480.031	-59.24	-7.75	-54.0	-5.24	216.00	Vertical	Horizontal	Pass
2460.700	4.11	-1.25	-30.0	34.11	117.00	Vertical	Horizontal	N/A
4924.200	-48.85	8.44	-30.0	-18.85	340.00	Vertical	Horizontal	Pass
9825.549	-42.89	18.72	-30.0	-12.89	84.00	Vertical	Horizontal	Pass
11085.662	-43.04	17.89	-30.0	-13.04	343.00	Vertical	Horizontal	Pass

A.9 Receiver Spurious Emissions

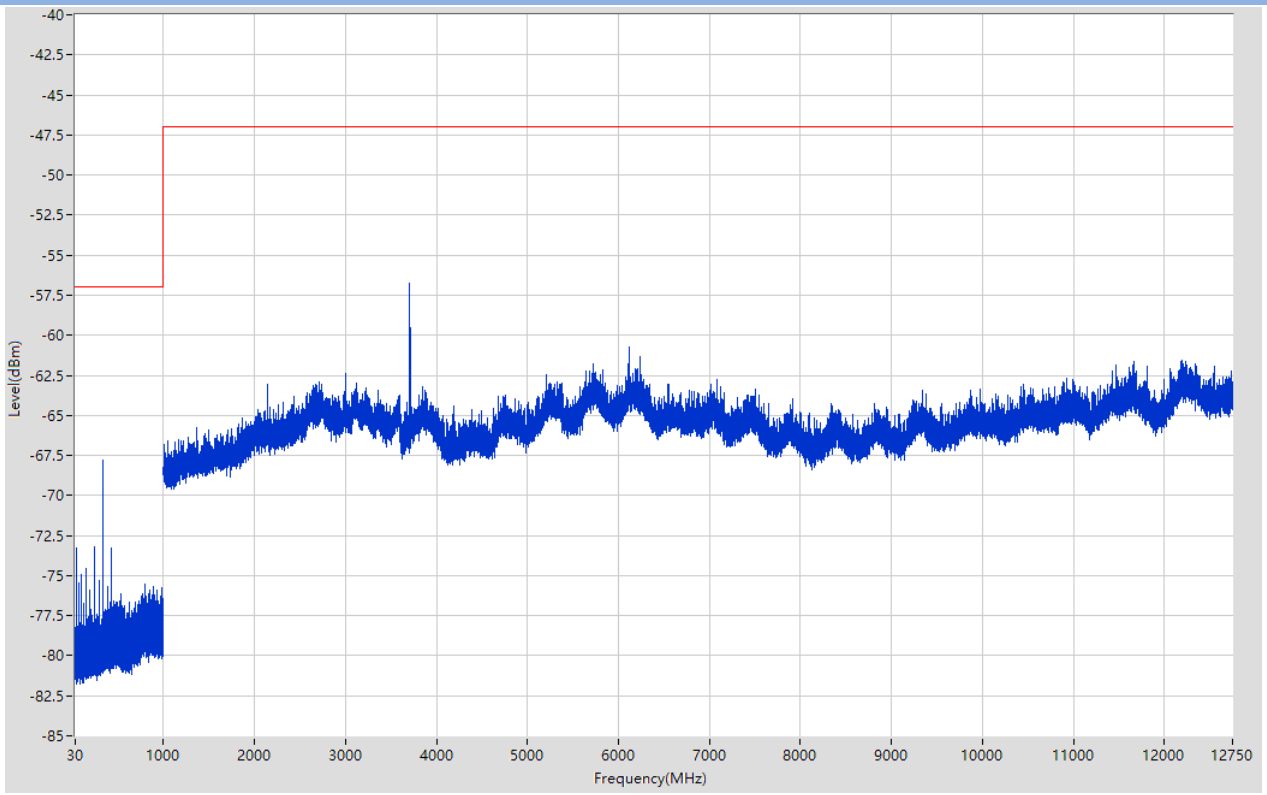
Note [1]: The test method choose the conducted method. Which power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment (cabinet radiation).
Note [2]: The Frequency band was pre-scanned, the harmonic and other spurious which worst frequency are recorded in the report.
Note [3]: The cabinet radiated test data is tested in the normal working mode of the product.

Measuring Parameter

Frequency Range		
30 MHz to 1 000 MHz	RBW (MHz)	100 kHz
	VBW (MHz)	300 kHz
	Sweep points	9970
	Detector mode	Peak
	Trace mode	Max Hold
1 GHz to 12,75 GHz	RBW (MHz)	1 MHz
	VBW (MHz)	3 MHz
	Sweep points	11750
	Detector mode	Peak
	Trace mode	Max Hold

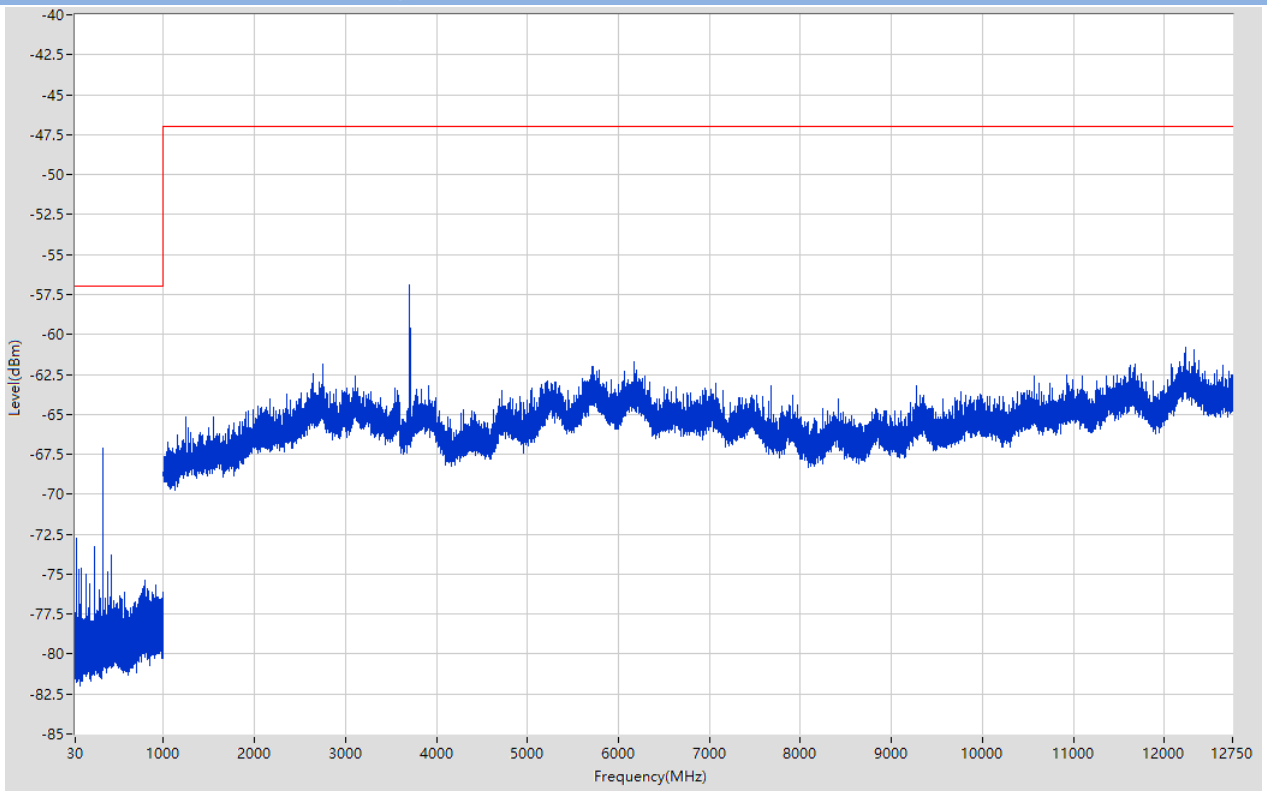
Conducted Test Data

802.11b, 30 MHz to 12.75 GHz, Low Channel



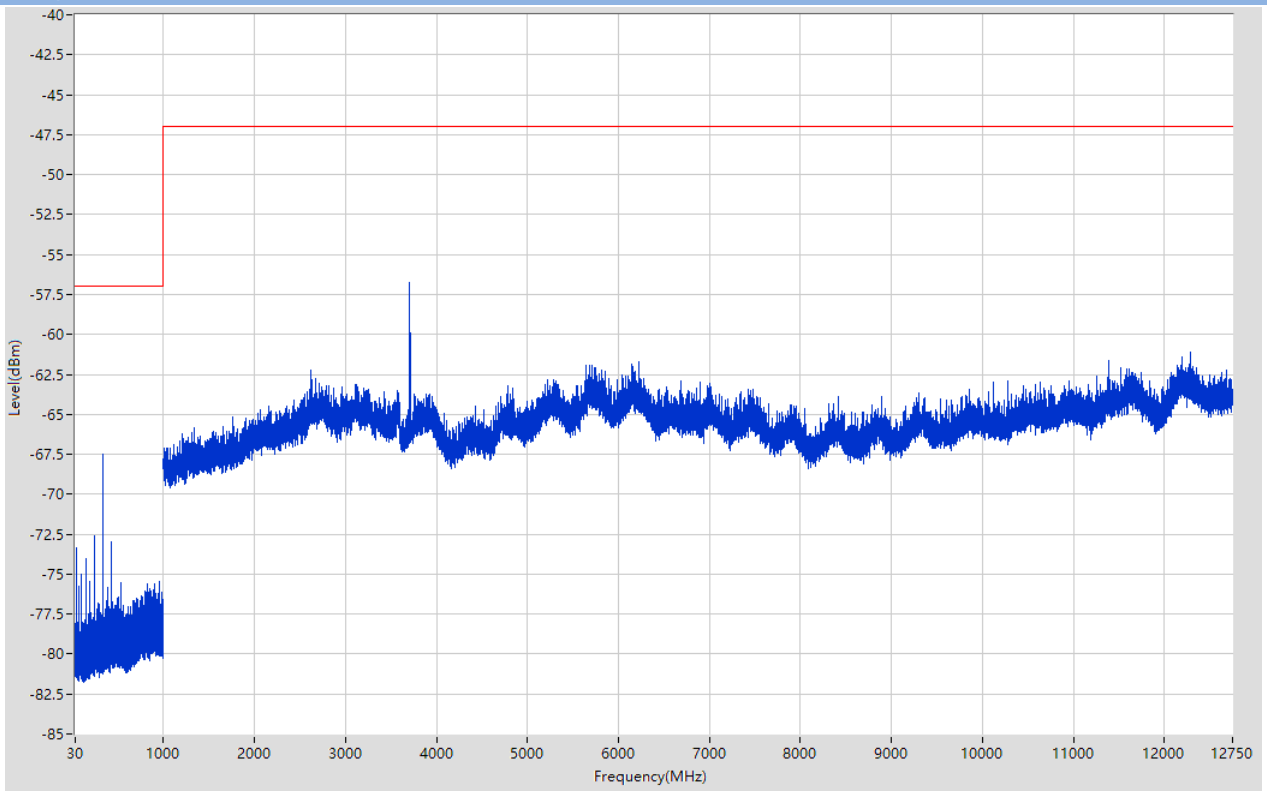
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	336	-67.76	-57	Pass	19401
1000	12750	1	Peak	3708	-56.78	-47	Pass	23501

802.11b, 30 MHz to 12.75 GHz, High Channel



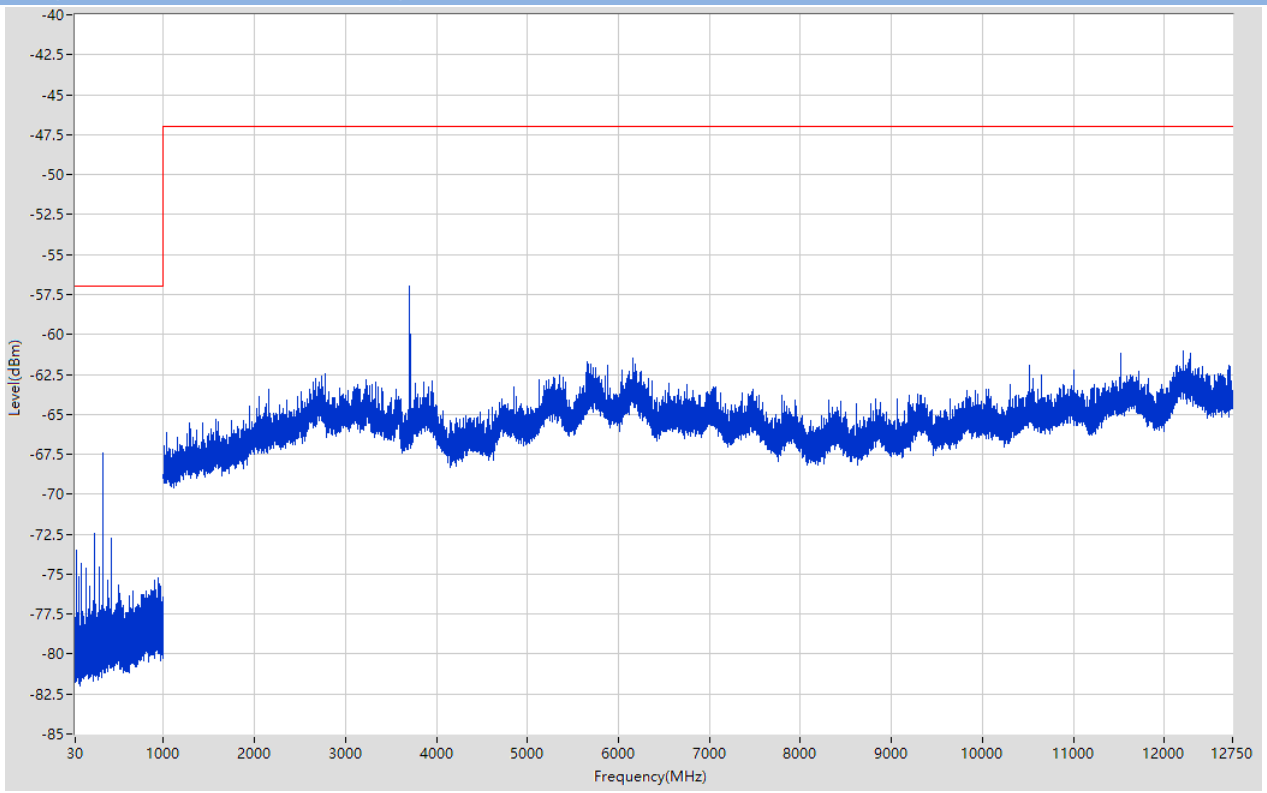
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	336	-67.11	-57	Pass	19401
1000	12750	1	Peak	3708	-56.92	-47	Pass	23501

802.11g, 30 MHz to 12.75 GHz, Low Channel



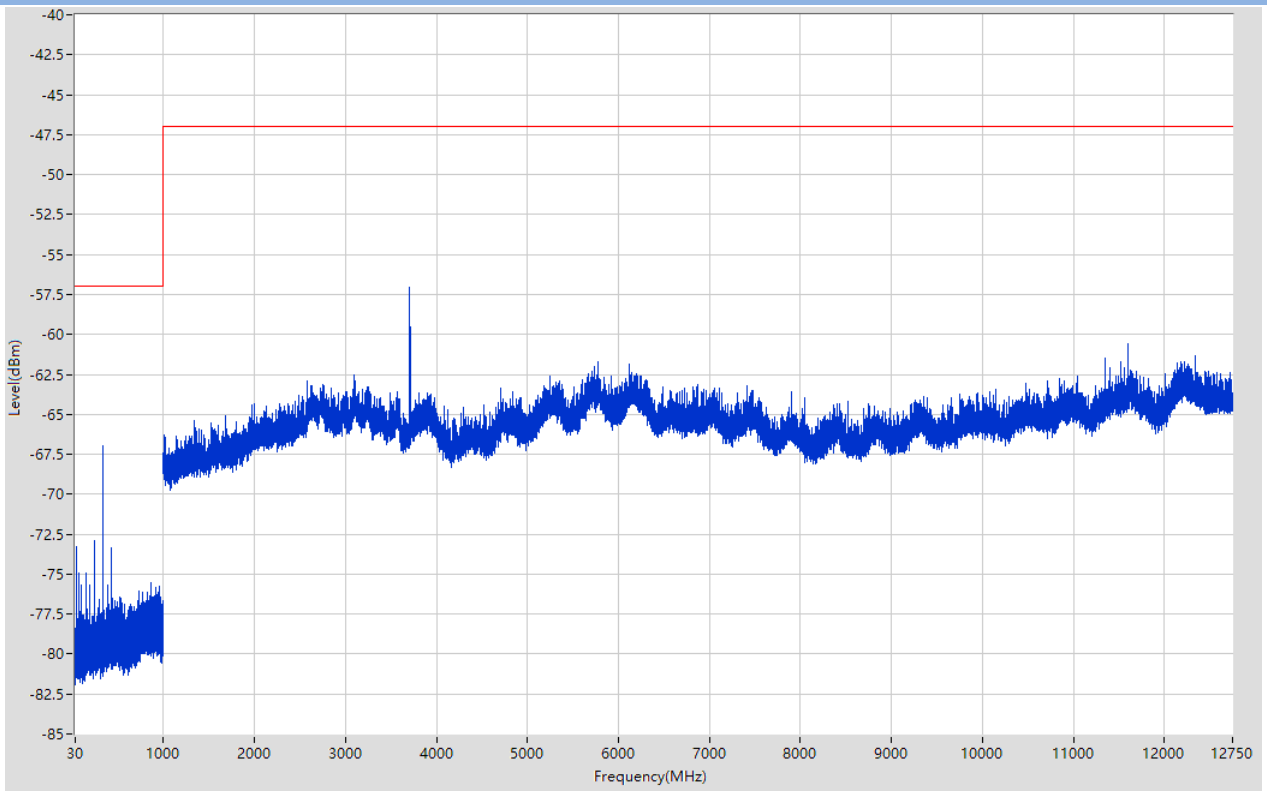
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	336	-67.48	-57	Pass	19401
1000	12750	1	Peak	3708	-56.76	-47	Pass	23501

802.11g, 30 MHz to 12.75 GHz, High Channel



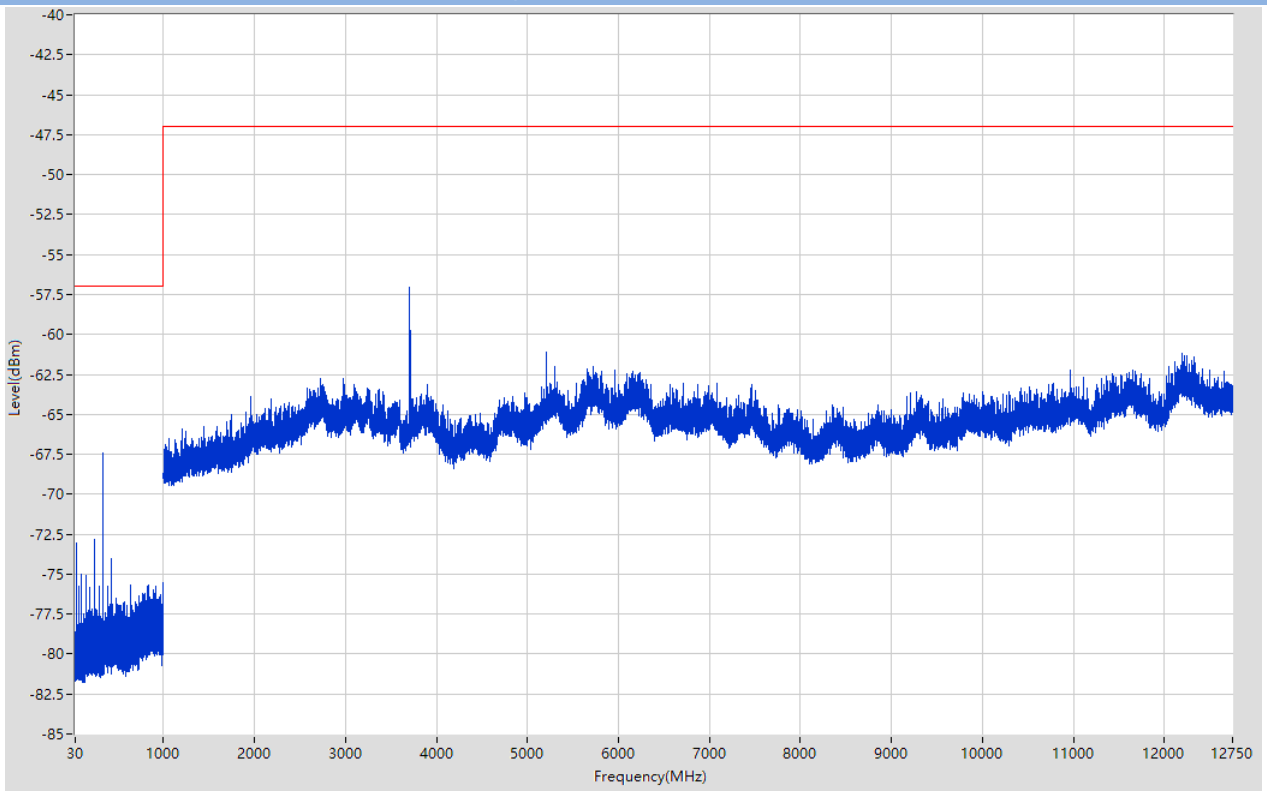
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	336	-67.41	-57	Pass	19401
1000	12750	1	Peak	3708	-56.96	-47	Pass	23501

802.11n(20 MHz), 30 MHz to 12.75 GHz, Low Channel



Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	336	-66.97	-57	Pass	19401
1000	12750	1	Peak	3708	-57.07	-47	Pass	23501

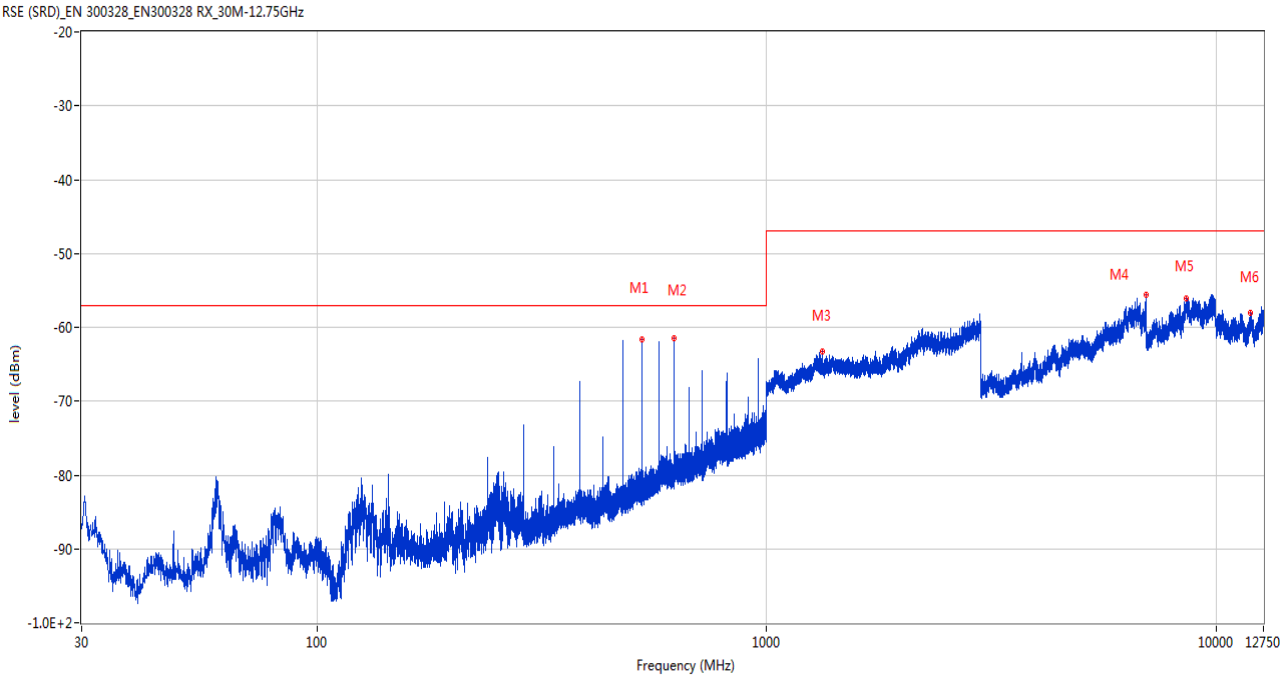
802.11n(20 MHz), 30 MHz to 12.75 GHz, High Channel



Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	336	-67.39	-57	Pass	19401
1000	12750	1	Peak	3708	-57.08	-47	Pass	23501

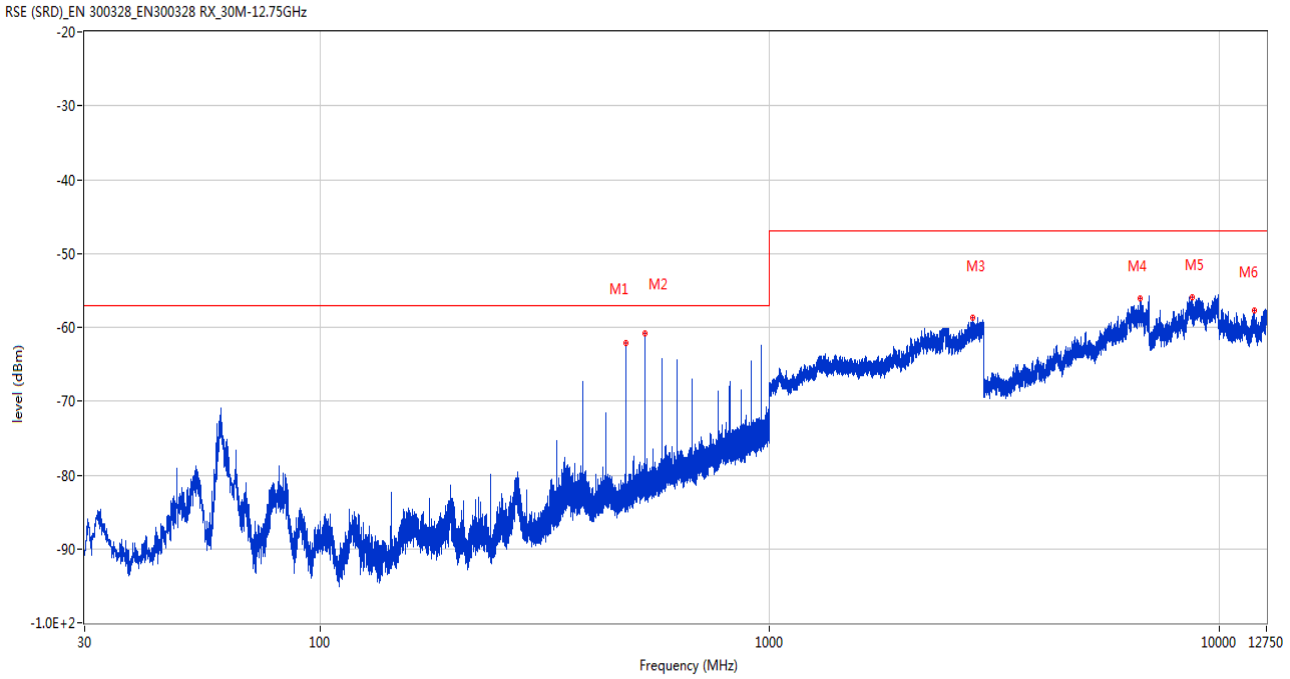
Cabinet Radiation Test Data

30 MHz to 12.75 GHz, ANT H



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
528.046	-61.56	-5.87	-57.0	-4.56	182.00	Horizontal	Horizontal	Pass
624.028	-61.41	-2.53	-57.0	-4.41	174.00	Horizontal	Horizontal	Pass
1331.200	-63.19	-4.60	-47.0	-16.19	92.00	Horizontal	Horizontal	Pass
6998.400	-55.60	5.92	-47.0	-8.60	304.00	Horizontal	Horizontal	Pass
8595.338	-56.13	5.80	-47.0	-9.13	234.00	Horizontal	Horizontal	Pass
11933.787	-58.11	5.41	-47.0	-11.11	116.00	Horizontal	Horizontal	Pass

30 MHz to 12.75 GHz, ANT V



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
480.031	-62.09	-7.75	-57.0	-5.09	182.00	Vertical	Horizontal	Pass
528.046	-60.88	-5.87	-57.0	-3.88	171.00	Vertical	Horizontal	Pass
2830.600	-58.65	1.16	-47.0	-11.65	39.00	Vertical	Horizontal	Pass
6686.000	-56.12	4.32	-47.0	-9.12	108.00	Vertical	Horizontal	Pass
8699.125	-55.99	6.32	-47.0	-8.99	95.00	Vertical	Horizontal	Pass
11972.025	-57.65	4.82	-47.0	-10.65	95.00	Vertical	Horizontal	Pass

A.10 Receiver Blocking

Test Data

Note 1: Blocking signal levels specified are levels in front of the UUT antenna. In case of conducted measurements, the levels corrected by the actual antenna assembly gain.

Note 2: During the Blocking test, the number of packets sent by the system is 1000.

802.11b:

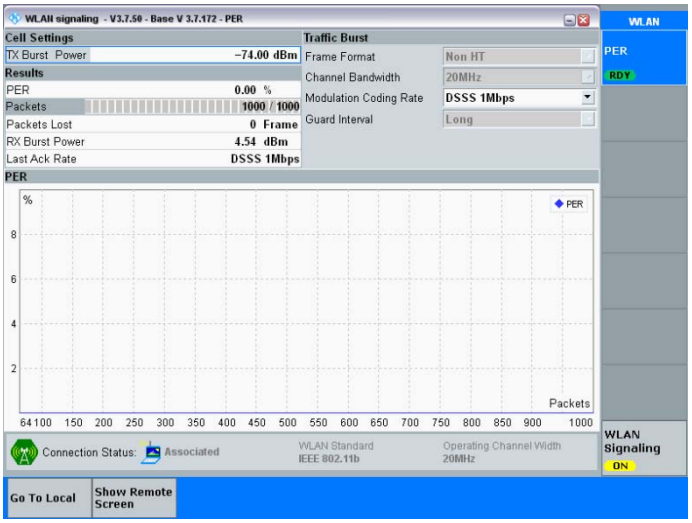
Receiver Category 1 equipment

Wanted signal mean power from companion device (dBm)	Blocking signal Frequency (MHz)	Blocking signal power (dBm) (see note 1)	PER Result		Limit	Verdict
			Low channel	High channel		
(-133 dBm + 10 × $\log_{10}$(OCBW)) or -68 dBm whichever is less	2 380	-34	0.00%	0.00%	≦10%	Pass
	2 504	-34	0.00%	0.00%		
(-139 dBm + 10 × $\log_{10}$(OCBW)) or -74 dBm whichever is less	2 300	-34	0.00%	0.00%		
	2 330	-34	0.00%	0.00%		
	2 360	-34	0.00%	0.20%		
	2 524	-34	0.00%	0.00%		
	2 584	-34	0.00%	0.10%		
	2 674	-34	0.00%	0.00%		

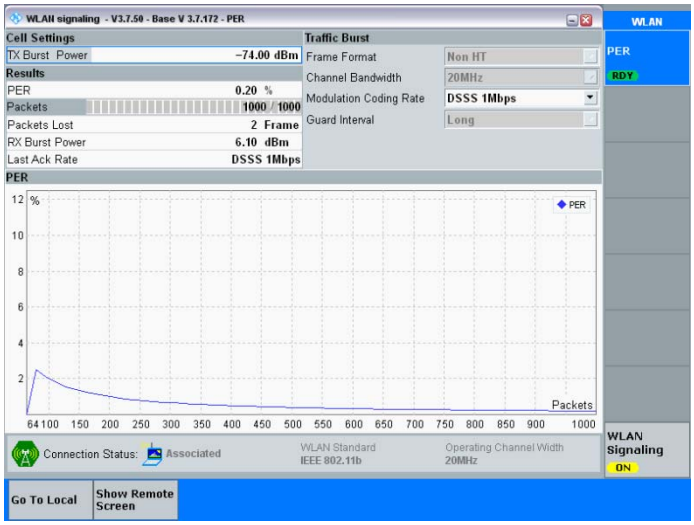
Test Plot (PER)

Note: All the configuration were tested, but only the worst PER Plot were reported in this report.

802.11b: Low Channel



802.11b: High Channel



ANNEX B TEST SETUP PHOTOS

Please refer to the document “BL-SZ21C0870-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer to the document “BL-SZ21C0870-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer to the document “BL-SZ21C0870-AI.PDF”.

--END OF REPORT--